WEST MARKETING ISSUE
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USDA Finds Fewer Boll Weevils in Many Cotton Areas

Hibernation Counts Down, but Trouble In Spring Likely

WASHINGTON — Woods trash ar cotton fields shelters fewer boll eevils this winter than last in sev- al leading cotton-growing states, t hibernating weevils are still merous enough to cause early- ason trouble, the U.S. Department Agriculture reports.

In Louisiana, Mississippi, South rolina, Arkansas and parts of orth Carolina, boll-weevil numbers rveyed last fall were below the ry high counts of the previous ar.

However, weather conditions avorable to development of this erennial cotton pest might still ring out damaging numbers this pring. Counts in Virginia, Tennes- ee and Georgia were higher than

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Two More Tolerances Announced by FDA

WASHINGTON, D.C.—Residue tol- ances for two more pesticides have n announced by the Food and ug Administration.

Sodium 2,2-Dichloropropionate alapon) has been given a tolerance 5 parts per million in or on sugar ts and sugar beet tops, and a tol- nce of 35 ppm in or on cottonseed.

1-dichloro-2,2-bis (p-ethylphenyl) ane, sold under the trade name of rthane, was given a tolerance of 15 n in or on broccoli, Brussels outs, cabbage, cauliflower, cherries, alrabi, lettuce, and spinach.

Only 2 Legislatures Expected to Consider Grade Change This Year

— SEE TABLE ON PAGE 4 —

Despite the fact that a great majority of the state legislatures are currently in session, not very many will so much as hear about the new model fertilizer bill that would put fertilizer grades on an elemental basis of NPK instead of the present designations of N, P_2O_5 and K_2O in the oxide form. This information was gained from a questionnaire sent out by Croplife to every state, to which 44 sent back their replies.

Of the 38 responding states whose legislatures are now in session, only two (Delaware and Iowa) stated they expected to consider the new model bill, while nearly all of the others expressed doubt that anything would be done at all on the matter during this legislative session.

Since the provisions of the proposed model state fertilizer bill would not become effective until July 1, 1960, many of the states seem to have adopted a "wait and see" attitude, hoping that the cue will be given by neighboring states.

As has been pointed out in previous discussions on the NPK subject, great importance has been placed on the uniformity of state laws, particularly in states where fertilizer shipments are normally made. Clyde Spry, secretary of agriculture of Iowa, said that "as the bill is now written, the change from oxide to elemental form will be made when two-thirds of the bordering states have made such a change."

How do these bordering states regard the bill? Illinois, adjoining Iowa on the east, states that the bill will not be introduced in the present session of its legislature. Furthermore, the attitude toward the bill is unfavorable, according to the questionnaire.

Nebraska, on the west, indicates somewhat the same. Its legislature is now in session, but the model bill will not be introduced. Ed Hoyt, director of the department of agriculture and inspection, Lincoln, observes that "The industry is not favoring (the bill) at this time."

South Dakota indicated that the bill will not be introduced in the current session, and that the legislators appear to be "undecided" about it. However, the model bill will be introduced in the next session of the state legislature, it is indicated.

To the north, Minnesota's legislature is in session, but the bill is not to be introduced at this time, according to R. E. Bergman, feed and fertilizer division, state department of agriculture, St. Paul. The bill is to be introduced in the next session in

(Continued on page 4)

Number of Plants Producing Granular Mixtures Nearly Doubles in Two Years

WASHINGTON — The number of mixing plants producing granular fertilizer has jumped from 80 in 1954 to 150 more currently, the Agricultural Research Service, U.S. Department of Agriculture, says in a special report on granular mixed fertilizers released here recently.

Latest figures for consumption of granular mixed products are for the fiscal year ended June 30, 1955, when use was 1,331,524 tons, or about 9% of all fertilizer mixtures marketed that year.

Almost 85% of the granular tonnage contained all three of the primary plant nutrient elements, and the remainder was made up of mixtures supplying two of the elements.

Farm use of granular mixtures in 1954-55 exceeded 100,000 tons in four states—Iowa, 180,112; Michigan, 139,764; Ohio, 137,871, and Indiana, 103,349.

"Farm use of granular mixed fertilizer in this country is expected to continue expansion at a rapid rate, as the granular products and their production are improved," USDA said in the special report.

"Major improvements in the granular mixtures are likely to come from research directed toward attaining more uniform distribution of nutrients among the granules and closer adjustment of phosphorus solubility and the proportions of other nutrients to meet specific nutrient requirements of different soil conditions and different crops."

Regional consumption figures of granular mixtures for 1954-55, in short tons, follow:

New England (Conn., Maine, Mass., N.H., R.I. and Vt.)—76,116.

Middle Atlantic (Del., D.C., Md., N.J., N.Y., Pa. and W.Va.)—133,740.

South Atlantic (Fla., Ga., N.C., S.C. and Va.)—12,191.

East North Central (Ill., Ind., Mich., Ohio and Wis.)—449,981.

West North Central (Iowa, Kansas, Minn., Mo., Neb., N.D. and S.D.)—471,199.

East South Central (Ala., Ky., Miss. and Tenn.)—21,751.

Mountain (Ariz., Col., Idaho, Mont., N.M., Nev., Utah and Wyo.)—9,903.

Pacific (Cal., Ore. and Wash.)—14,231.

Liquid Fertilizer Capacity Doubled During Past Year, Conference Speaker Reports

WILSON DAM, ALA. — About 80 ils and fertilizer experts from 21 ates and the USDA attended the nual fertilizer evaluation confer- ce held at Wilson Dam, Jan. 23-25. The conference was a joint meeting tween the fertilizer work group of e Southern Regional Soil Research ommittee and state experiment sta- on-TVA cooperators.

Results in pasture production by exas soils researchers showed that nual applications of 30 lb. phos- ate as superphosphate was su- erior to phosphate applied in the rm of basic slag or rock phosphate. here the object was to grow a uni- rm and high production of forage ontaining much protein and enough hosphorus for beef cattle. F. L. Fish- er of Texas A&M agricultural experiment station reported on this project.

Dr. Eugene Doll, University of Kentucky, Lexington, reported that salts applied in conjunction with concentrated superphosphate increased the phosphorus availability. This was compared to equal amounts of phosphorus applied alone, in broadcast, or in band-placed applications.

Dr. H. A. Curtis, member of the TVA board, discussed "Rock Phosphate and Its Treatment with Sulfuric Acid." Dr. Curtis advanced his own theories about how phosphate was laid down geologically millions of

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Inside You'll Find

Anhydrous Output Registers Increase Of 5% in 1956

WASHINGTON — Production of anhydrous ammonia in 1956 was about 3,320,000 tons, a 5% increase over output of 3,163,000 tons in 1955, the U.S. Department of Commerce states in its monthly chemical and rubber industry report.

The average rate of production during 1956 amounted to slightly more than 80% of capacity in existence at the beginning of the year. Although three new plants came on stream in the late summer or fall and three more were scheduled to start production in December or January, their capacity was not considered as contributing to the 1956 level.

These six plants will boost the 1957 plant total to 39 with annual capacity of 4,552,000 tons, an 11% gain over capacity at the beginning of 1956, according to the report.

Several other plants are under construction or planned, and the report stated that it is probable that by the end of 1957, five or six more plants with combined annual capacity of 300,000 tons of ammonia will be added.

Advisory Group Urges More Fundamental Research on Soils, Water, Fertilizer

WASHINGTON — A research program calling for studies to help meet the critical problems of soil and water in the nation was urged by the Soils, Water and Fertilizer Research Advisory Committee, a group named to advise the U.S. Department of Agriculture in this field.

The 10-member committee asked for a broad and comprehensive research program directed toward a better understanding of the processes involved in the sustained use of soil and water resources, at its annual meeting in Washington, Jan. 28-30. In one of its general recommendations the committee proposed a program emphasizing "a fundamental approach wherein the fundamental principles and underlying causes and effects are studied with a view toward solving the soil and water problems of the nation."

The committee considered specific proposals for research in seven categories. Among lines of work given priority in each of these categories were the following:

Soil and water management research in humid regions: Expand research on ways to conserve moisture on humid region crop land, to counter recurring drouths. Expand irrigation research for more information on soil-water-plant relationships in humid areas.

Soil and water management research in irrigated and dryland regions: Expand studies on soil and water management conservation practices for western range land. Strengthen work on ways to reduce water losses and to improve application and distribution of water on western farm fields.

Soil and water management research in humid and other regions: Increase research to conserve all available supplies of irrigation water and to improve utilization of water supplies. Expand studies on legume inoculation, with emphasis on the effect of climate and soils on different species of rhizobia.

Hydrology of agricultural watersheds: Expand and intensify research in hydrology (science of how water behaves on land) of agricultural watersheds in strategic areas of the nation. Increase studies to find the relation of sediment yield to characteristics of watersheds.

Watershed management on forests and related rangelands: Expand work on the effects on water yield of vegetation changes on well-drained slopes. Expand studies to determine the effect on streamflow, erosion, and sedimentation of different uses and systems of managing forests and related rangelands.

Basic soil-plant relationships: Initiate basic research on the reaction of lime with soils, and on the effects of liming upon nutrient availability to plants. Expand studies on the complex interrelations of factors that influence the movement of water into and through soils.

Fertilizer improvement research: Expand participation by the department in the effort to facilitate control of fertilizer quality. Initiate research on potassium fertilizers of low solubility.

The committee is submitting a detailed report of its recommendations to the department. Copies of this report will be available in a few weeks from the committee's executive secretary, Dr. C. P. Barnes, Office of the Administrator, Agricultural Research Service, USDA, Washington 25, D.C.

The group reelected as its chairman, James J. Wallace, farm manager, Iowa State College Agricultural Foundation, Ames, Iowa. Other committee members besides Mr. Wallace attending the meeting were: Wayne M. Akin, Western Farm Management Co., Phoenix, Ariz.; Everett M. Barr, Liberty, Neb.; Dr. Russell Coleman, executive vice president, National Plant Food Institute, Washington, D.C.; W. Lewis David, Corsicane, Texas; E. M. Dwyer, Weymouth, Mass.; Lester F. King, Helix, Ore.; Dr. D. F. Peterson, Jr., head, department of civil engineering, Colorado A&M, Fort Collins, Col.; Robert V. Smrha, chief engineer, Division of Water Resources, Kansas State Board of Agriculture, Topeka, Kansas; and Dr. N. J. Volk, associate director, Agricultural Experiment Station, Lafayette, Ind.

The committee was established under the Research and Marketing Act of 1946.

Monsanto Chemical Co. Shows Increase In Sales in 1956

ST. LOUIS — Sales of Monsanto Chemical Co. and its consolidated subsidiaries for 1956 amounted to $541,883,000 compared to $522,349,000 for 1955.

Unaudited net income for the year 1956 was $38,646,000, which is equivalent to $1.80 a common share on 21,446,461 shares outstanding on Dec. 31, 1956.

Estimated undistributed income of Monsanto's equities in unconsolidated subsidiaries and 50% owned associated companies amounted to 33¢ per share in 1956.

Income for 1955 amounted to $42,170,000, equivalent to $1.98 a common share on the 20,998,945 shares outstanding at that time. All 1956 figures are unaudited.

Fertilizer Meetings Scheduled in Tennessee

KNOXVILLE—Fertilizer and seed uses and problems are being highlighted in a series of meetings being held in Tennessee this month. The sessions are being sponsored by the University of Tennessee Agricultural Extension Service and State Department of Agriculture.

The first meeting was held at Nashville, Feb. 5. Others are scheduled for the King Arthur Court in Greeneville Feb. 12, Tennessee Wesleyan College in Athens Feb. 13 and the city hall in Jackson Feb. 14.

All meetings will start at 9:45 o'clock in the morning, and close at 3 p.m. Presiding will be L. C. Jacobs, superintendent, division of feed, seed and fertilizer, Tennessee Department of Agriculture.

Discussions will be led by W. L. Parks, University of Tennessee associate agronomist; M. S. Williams, chief economist, National Plant Food Institute, Washington; William D. Bishop, University of Tennessee associate extension agronomist; William Cross, supervisor of soil bank program, A.S.C.; W. R. Little, manager, Tennessee Crop Improvement Assn.; R. C. Harnden, Chapman Chemical Co., and James R. Turner, analyst, Pacific Coast Borax Co.

Subjects will range for discussion, from liming field crop varieties, from the soil bank to county programs. Fertilizer programs and combinations of programs also will be taken up.

Joins Cooperative

HOLTON, KANSAS—Keith Wagoner, who has taught vocational agriculture for 14 years, has joined the staff of the Farmers Union Co-op Business Assn. here. He is in charge of the fertilizer department and the merchandising of a complete line of agricultural chemicals. He is also in charge of the over-all program dealing with buying and selling of agricultural seeds.

AGRONOMY HONORS AWARDED—Leroy V. Boger (second from left) is congratulated by Dr. W. H. Garman, chief agronomist of the National Plant Food Institute, on receiving the 1956 Agronomy Achievement Award at Ohio State University. The award was presented at the recent annual fertilizer and lime dealers conference held in the State Office Building, Columbus. C. S. Hutchinson (left), assistant dean of the College of Agriculture, Ohio State University, and Dr. Garth W. Volk (right), head of the agronomy department were on hand to witness the presentation and to extend their congratulations to Mr. Boger. The award is presented annually to the most outstanding Ohio State Junior student majoring in agronomy, and is based on scholarship, character, and leadership. It carries a cash prize of $200 and an engraved key, presented by the Institute. Each annual winner's name is engraved on the plaque shown above.

Mathieson Pan-American Setting Up Distributing Organization in Cuba

NEW YORK—Mathieson Pan-American Chemical Corp. is completing arrangements to organize its own distributing organization in Cuba for high analysis pelletized fertilizer, it was announced here recently by George E. Vreeland, vice president. Headquarters will be in the city of Camaguey.

Juan Aguayo will be transferred from Mathieson Quimico, Mexico, to become sales manager. His headquarters were in Mexico City. He will be assisted by Claus Tameling who formerly was assistant product manager for fertilizer for the Chemicals International Division of Olin Mathieson Chemical Corp. in New York.

Both Mathieson Pan-American and Mathieson Quimico are subsidiaries of Olin Mathieson Chemical Corp.

As part of its Cuban operation, Mathieson is readying warehouse facilities in the port of Pastelillo, near Camaguey. The selection of the port and the headquarters city were made because of their location in the heart of the sugar cane and rice areas of Cuba.

Charles W. Mitchell Named Vice President Of Stauffer Chemical

NEW YORK — Stauffer Chemical Co. has announced the appointment of Charles W. Mitchell to the position of vice president of the company and general manager of the Nyotex Chemicals Division. He will make his headquarters in Houston.

Mr. Mitchell joined Consolidated Chemical Industries, now a division of Stauffer, in 1929 and during the ensuing 24 year period assumed the positions of traffic manager, sales manager, general manager and vice president and general manager of Consolidated's southern division plants. When Nyotex Chemicals, Inc. was formed in 1942, Mr. Mitchell became an officer and director. In 1935 he was named executive vice president and general manager of Nyotex.

California Faces Threat of Severe Hopper Damage

SAN FRANCISCO — Surveys indicate that farmers and ranchers in nearly a score of California counties may encounter heavy damage from grasshoppers in 1957, according to the California Department of Agriculture.

A department warning of impending grasshopper damage is based on a report of Martin Poyner, assistant state leader, grasshopper control, in summary of survey records of adult grasshopper populations in the fall of 1956.

The report indicates that approximately 1,100,000 acres, primarily rangeland, may be infested with "hopper" populations ranging from "threatening" to "severe" during the 1957 season.

Counties where this insect pest is expected to cause heavier losses in crops and pastures are: Alpine, Butte, Calaveras, Fresno, El Dorado, Humboldt, Kern, Kings, Monterey, Nevada, San Diego, San Luis Obispo, Shasta, Siskiyou and Tahama.

Cooperative assistance in grasshopper control will be provided by federal, state and county governments together with owners of grasshopper infested land. Over-all it is expected that between 300,000 and 500,000 acres may be treated with insecticides applied by airplanes in April and May to reduce grasshopper populations on infested lands, Mr. Poyner said.

Grasshopper control work in California is directed by the county agricultural commissioners with assistance given by state and federal personnel.

BANK DIRECTOR

MINNEAPOLIS — John R. Hale, manager of the Chase Bag Co. branch at Minneapolis, has been elected to the board of directors of the Camden Northwestern State Bank here. Mr. Hale, a native of Grand Forks, N.D., started as a salesman for Chase in 1926 and became branch manager in 1936.

...tton Pest Control, ...tilization Topics ... Cotton Conference

...HOENIX, ARIZ. — Fertilization, ...gation, insect control and plant ...ases are prominent on the agenda ... discussion at the 1957 Western ...on Production Conference to be ... at the Westward Ho Hotel, ...enix, March 4-5.

...ollowing welcoming talks by Cecil ... Collerette, general chairman of ... conference and Dr. Richard A. ...vill, president of the University ...Arizona, sessions will be held to ...uss various phases of cotton pro...tion and marketing.

...John H. O'Dell, county agent, ...oenix, will talk on "Post-Har...t, Pre-planting Measures for De...ssing and Controling Insets and ...seases," and a series of further ...cussions on the control of both ...ects and plant diseases that in...t cotton.

...r. Harold W. Reynolds, nematol...t of the cotton research center, ...DA, Tempe, Ariz., will talk on ...trolling seedling diseases, includ... nematodes; Dr. J. N. Roney, en...ologist of the Arizona agricultural ...ension service, Phoenix, will speak ... early-season insect control, and ... Philip J. Leyendecker will sum ... the earlier discussions in a talk ...itled, "Putting These Practices ...ether."

...he subject of fertilization and ir...ation will occupy a prominent por... of the program of March 5, ac...ding to the pre-convention sched... John R. Stockton, irrigation spe...list of the University of California, ... discuss "Combining Fertilization ... Irrigation for Optimum Results"; ...Fred Arle, agronomist of the weed ...estigations section, ARS - USDA, ...enix, will talk on "Full-Season ...ed Control Practices and Costs"; ...P. Ewing, cotton insects section ... USDA, Beltsville, Md., "Con...lling Insects," and Dr. L. A. Car..., head of the department of en...ology, University of Arizona, ...son, "Hazards in Using Phos...rus Insecticides."

...Further information on con...olling diseases of cotton will be ...ought by Dr. John T. Presley, ...ant pathologist of the USDA, ...ltsville, Md.

...echniques of skip-row planting ... be discussed from the stand...nts of agronomy, economics and ...hat Is the Most Profitable Yield?" ...se talks will be handled respec...ly by Dr. W. D. Fisher, agrono...t; Jack Wooley, agricultural econ...st, and Dr. Andrew Vanvig, agri...tural economist, all of the Uni...sity of Arizona.

...ther aspects of cotton growing, ...rkets and the economic outlook ... also be discussed at the two... meeting.

...rm Sales Hold ...eady in California

...AN FRANCISCO—For the first ...e in several years sales of all ...ds of materials and equipment to ...ms and gardens showed no gain ...ween corresponding quarters of ... successive years in California.

...ccording to the division of re...rch and statistics of the California ...te Board of Equalization, retail ...s by farm implement dealers and ...m and garden supply stores held ...bout $68,800,000 during the third ...rters of the years 1955 and 1956. ...hough farm and garden supply ...es gained an estimated 8¼%— ...m $22.2 millions to $24.3 approxi...ely, sales by farm implement ...ers dropped about 4%, from $46.3 ...44.5, or just about offsetting the ...r's gain.

...ales through these stores repre...ed about 1½% of all retail sales ...e in the state between July 1 ... Sept. 30 of last year, the divi... reported.

Kansas Weed Conference Planned for Feb. 13-14

TOPEKA, KANSAS—A prominent discussion topic at the Kansas Weed Conference here, Feb. 13-14, will be the serious threat to Kansas through heavy movement of weed infested feed, hay and grain into Kansas, according to Jake Ubel, weed supervisor for the State Board of Agriculture.

Attacking the problem at the county level will be panel members A. R. Fischer, Logan County, and Ross Clopton, Greenwood County, commissioners; Albert Bray, Clark County, Raymond Barker, Wyandotte County, and August Ungerer, Marshall County, weed supervisors; and Maynard W. Scott and John Hutchinson, assistant state weed supervisors. Mr. Hutchinson will serve as moderator.

Drouth effects on results to be expected with soil sterilants will be reported on by Oliver G. Russ, superintendent of the Canton experiment field. New methods of Johnson grass control will be discussed by Dr. L. E. Anderson, in charge of Kansas State College weed investigation.

G. Robert Gadberry, Wichita, Kansas, bank president, will address the Wednesday evening banquet at the Hotel Kansas. Dick Nichols of the WIBW radio and television farm staff, Topeka, will serve as toastmaster. Service awards will go to long-time weed supervisors in the state.

SOIL BANK INTEREST

STATE COLLEGE, MISS.—Mississippi farmers are showing considerable interest in the acreage reserve part of the soil bank program, according to agricultural extension service county agents. Some counties reported as high as 17% of the total cotton acreage going into the soil bank.

Filberts Damaged by Oregon Cold Spell

PORTLAND, ORE. — Winter blooming filberts appear to be the only Willamette Valley trees harmed by the recent cold spell.

Lloyd Baron, Washington County agent at Hillsboro and former manager of the Oregon Nut Growers Assn., reports that the filbert trees themselves have not been damaged, as was the case during the November, 1955, freeze, but there is a chance production may be curtailed by freezing of blossoms.

Extent of damage won't be apparent until around April, Mr. Baron said. Filbert specialists report the plant's blossoms are damaged by temperature below 10°. Damage is likely to be spotty throughout the valley. Mr. Baron feels that in the case of other fruit trees and most berries, they have had a chance to "harden off" and attain normal dormancy.

OUTLOOK FOR MODEL BILL

(Continued from page 1)

1959, however, Mr. Bergman states. "At the present time, the industry is undecided in Minnesota. The fertilizer manufacturers or dealers do not have a Minnesota assn. or organization to indicate policy," he explained.

Northeast of Iowa, bordering part of the state, is Wisconsin. The legislature in the Badger state is in session, but according to W. B. Griem, of the state department of agriculture, the law makers are "probably not at all familiar with the proposal." He added that "no decision has as yet been reached as to whether the new model fertilizer law will be introduced at our current legislative session."

Missouri, an important southern neighbor, reports that although its legislature is in session, the model bill is not likely to be introduced. A spokesman for the agricultural experiment station at Columbia, said that there is no way at present of knowing whether the measure will be introduced at the next session, since much depends upon action by adjoining states.

Thus is illustrated the general picture, according to many observers. Practically every state is keeping an eye on its neighbor, while the issue remains divided, usually between the industry viewpoint and that of experiment station personnel.

F. W. Quackenbush, Indiana state chemist and chairman of the special committee on fertilizer guarantees for the Assn. of American Fertilizer Control Officials, made appropriate comments to clarify the NPK picture. He stated that the Indiana state legislature is in session, but the bill will not be introduced at the present time. Its status was described as "undecided."

The state official outlined the history of the proposal, reminding that it has been discussed openly between control officials and the fertilizer industry for many years, with the result that a model fertilizer bill was written and sponsored by the control officials for some ten years.

It was amended in 1955, he said, then again in 1956, to enable a change at an effective date any time after July 1, 1960.

Dr. Quackenbush said that a "small group in the industry has led an active campaign against the changes proposed in the uniform bill," and that "some of the primary arguments against the bill have focused not on elemental guarantees, but on items which have little or no relation to the form of guarantee."

He mentioned specifically the discussions within the trade regarding guarantees for water-soluble phosphorus. "The bill makes no mention of water-soluble phosphorus," he said. "Such a guarantee was not contemplated or even discussed by the committee which drafted the bill," he added.

Dr. Quackenbush summed up his statement by saying that the A.A.F.C.O. committee intends to go ahead with its assignment to help make possible a change which a number of actively-interested groups, including many in the industry, recognize as a progressive and desirable step in the long term.

"The fertilizer industry has shown its progressiveness in many other ways and we do not feel that the industry as a whole will drag its feet on an issue which the majority of the groups feel is worth the effort."

How about the states in the southeastern area of the U.S.? Is there a significant picture here? Beginning with Virginia, the prospects for adoption of the model bill appear bleak. According to Rodney C. Berry, chief chemist and director of that state's division of agriculture, it is "very doubtful" if the bill will be introduced in the next session. The State legislature is not now in session.

One reason for the unlikelihood of Virginia's passing a model bill, is that the State's present fertilizer law parallels the model bill, except the requirements for guaranteeing phosphorus and potassium. "There is general opposition in this area to proposed change from oxide to elemental guarantees for P and K," he comments. "The official position of this department is that the end results will not justify the cost and confusion of making the change. No state agency or agricultural group is advocating such change."

West Virginia is undecided about the proposed change, according to J. T. Johnson, commissioner of agriculture in that state. The legislature is now in session, but is not expecting to consider the bill this session, he says. However, Mr. Johnson points out that "West Virginia was the first state to enact the model fertilizer law. At that time, the question of expressing P and K was not in controversy. We hope to have our law changed by 1960, if other states have adopted the method of expressing P and K in the elemental form."

South Carolina, one of the heaviest fertilizer users in the nation, will not have the new proposed law introduced at the present legislative session. Dr. Bruce D. Cloaninger, head of the department of fertilizer inspection and analysis, Clemson, comments that an educational program is essential well in advance of any legislation or ruling. "Such a program has been in effect for some time," he adds.

North Carolina also states that its legislature will not consider the new model bill, and that the attitude toward it is at present unfavorable. "In my opinion, the North Carolina Fertilizer Law parallels the model bill with the exception of our requirements for guaranteeing phosphorus and potassium," writes John L. Reitzel, assistant commissioner of the N.C. department of agriculture, Raleigh.

"It is my opinion that the opposition in this area to a change from oxide to elemental guarantees for P and K would be so great that it will require many years before such a move would be feasible. No state agency or agricultural group is advocating such a change at this time," he adds.

In the case of Kentucky, Bruce Poundstone, director of the agricultural experiment station, Lexington, says that the state legislature is not now in session, and so far as he knows, no one is proposing the model bill for the upcoming session. "Our law is satisfactory as it stands," he declares. "We can go to an elemental guarantee as soon as other states are ready."

The Alabama legislature is not in session, so the bill is naturally not being considered now. However, the body will convene in May, and such a move could be made at that time. According to George H. Marsh, director of agriculture and industry of the state, "There has been no mention of it so far as I know."

In Tennessee, there is no plan for the state model bill to be considered at the current session of the legislature, according to L. C. Jacobs, superintendent of seeds, feeds and fertilizer of the department of agriculture, Nashville. No indication was made as to whether or not the bill may be considered at the next session.

M. P. Etheredge, dean and state chemist at Mississippi State College, State College, Miss., reports that the legislature there is not in session.

He told of a recent talk before a group of Mississippi fertilizer manufacturers and agricultural workers, in which it was suggested that 20% superphosphate be stretched from 8.73% P to 9% P. "Most companies," commented Dr. Etheredge, "already are boosting their natural superphosphate with triple superphosphate in order to meet the 20% guarantee. Therefore, it might be simple when changing to the elemental basis to have an 8% grade of phosphorus which could probably be made from natural 18% material and stretch the normally-used 20% superphosphate to a 10% P instead of 9%. In this way more phosphorus would be sold to the farmer."

So far as educating the farmer, Dr. Etheredge says he is not too worried. "Since the days of the New Deal and alphabet agencies, the change from Washington has been more often than the weather and the farmer has learned to take it."

The Ohio legislature is currently in session, but the model bill won't be introduced. The legislators are undecided about the matter, according to W. S. Thompson, chemist in charge of the feed and fertilizer section, department of agriculture. "No action has been decided for the present," he reports.

To the north, Pennsylvania reports that a favorable attitude prevails among its legislators, but the model bill is not expected to be introduced into the current legislative session.

About the same situation is true in New York state, where the legislature is now in session, but it is reported here that the lawmakers are undecided about the model fertilizer bill.

Five of the New England states responding to the questionnaire said their state legislatures are in session, but in no case is the model bill being introduced.

John W. Kuzmeski, Massachusetts state chemist, commented that "Since any expense involved in making the change to P and K, and most of the burden of explaining change to farmers would fall on industry, I feel that it is up to industry to either accept or reject the change. While it is planned to introduce the model bill next year, the change to P and

NPK vs. $N\text{-}P_2O_5\text{-}K_2O$ . . .

Progress on Fertilizer Legislation Reported

State—	Legislature in Session?	Considering Model Bill?	Favorable?	Undecided?	Will Bill Be Considered at Next Session?
Alabama	NO	....	....	....	....
Arizona	YES	NO	....	YES	YES
Arkansas	YES	NO	NO	....	....
California	YES	NO	....	YES	YES
Colorado	YES	NO	NO	....	....
Connecticut	YES	NO	....	....	....
Delaware	YES	YES	....	....	....
Florida	NO	....	....	....	....
Georgia	YES	NO	....	YES	....
Idaho	YES	NO	YES	....	YES
Illinois	YES	NO	NO	....	....
Indiana	YES	NO	....	YES	....
Iowa	YES	YES	....	....	....
Kansas	YES	NO	....	....	....
Kentucky	NO	....	....	....	NO
Louisiana	NO	....	....	YES	....
Maine	YES	....	....	YES	....
Maryland	....	....	....	....	....
Massachusetts	YES	NO	....	....	YES
Michigan	YES	NO	....	YES	....
Minnesota	YES	NO	....	YES	YES
Mississippi	NO	....	....	....	....
Missouri	YES	NO	....	YES	....
Montana	....	....	....	....	....
Nebraska	YES	NO	....	....	....
Nevada	YES	NO	....	....	....
N. Hampshire	YES	NO	....	YES	YES
New Jersey	YES	NO	....	....	....
New Mexico	YES	NO	....	YES	YES
New York	YES	NO	....	YES	....
N. Carolina	YES	NO	NO	....	....
N. Dakota	YES	NO	....	YES	....
Ohio	YES	NO	....	YES	....
Oklahoma	YES	NO	....	YES	....
Oregon	YES	NO	....	....	....
Pennsylvania	YES	NO	YES	....	....
Rh. Island	....	....	....	....	....
S. Carolina	YES	NO	....	....	....
S. Dakota	YES	NO	....	YES	YES
Tennessee	YES	NO	....	....	....
Texas	YES	NO	....	YES	....
Utah	YES	NO	....	....	....
Vermont	YES	NO	....	....	YES
Virginia	NO	NO	NO	....	....
Washington	....	....	....	....	....
W. Virginia	YES	NO	....	....	....
Wisconsin	YES	....	....	....	....
Wyoming	YES	NO	....	....	....

not be recommended unless the ority of manufacturers favors a change."

he Vermont situation is one of l consideration, according to R. Wetherbee of the regulatory labo- ry, Burlington, Vt. "The Vermont rney general has been asked to whether or not this may be han- l by 'promulgation of regulation r due hearing.' If it can be done his manner, it will be. Otherwise, ill will be presented at the 1959 eral assembly."

he New Hampshire report came n George H. Laramie, control su- visor, of the department of agri- ture: "We recently held a meeting h fertilizer manufacturers, state m leaders, and university agrono- ts, relative to the changing from les to the elements," he says. "No cial poll was taken as the meeting s only an educational one, but it ears that industry is against the nge-over."

The reply from Maine indicated ly that the legislature there is decided about the bill, and prac- cally the same indication came om Connecticut, in which the at- ude of the legislators was termed "not sure."

The three Pacific Coast states all icate that no immediate action is pected to be taken on the model at the present time, at least. Al- B. Lemmon, chief of California's ision of plant industry, comments t the matter of the new fertilizer needs more discussion and better derstanding before action should be ked of the legislature.

He indicated that the bill will not introduced in the present session, t will probably be considered when t body meets in 1959.

J. D. Patterson, chief chemist of egon and president of the Associa- n of American Fertilizer Control ficials, indicated that the present islature will not consider the new l, and that the proposal is unknown most of the legislators. "I feel that islation should not be considered til all interested groups are fully formed on both sides of the pro- sal. Such groups would consist of ers as well as dealers and pro- cers. Legislation should follow ed- ation and understanding," he said.

Henry R. Seidel, assistant director, ricultural and marketing division the Washington state department agriculture, reports that some nor amendments will be presented the current session of the legisla- re to improve operation of the ashington fertilizer act, but "so far we can determine at this time, the islature will not consider the new odel bill and NPK."

Other comments of interest came om wide areas of the U.S. Paul W. isher, commissioner of agriculture Colorado, reports that the legisla- re now in session would probably ok upon the bill unfavorably, al- ough it has not yet been intro- ced. "Most of the people we have lked to, do not think a change ould be made at this time," he says.

The Delaware legislature has not d the bill introduced as yet, al- ough it is thought likely that it ill be introduced before the present ssion adjourns.

In Florida, the state legislature s not in session, so there was no asis for an opinion to be expressed whether the group's attitude would be favorable or not. J. J. Taylor, state chemist at Tallahas- ee, commented that "at the pres- nt time, there is some unfavorable omment among fertilizer manu- facturers. This may change, and a more favorable attitude prevail as ime goes by," he observed.

John L. Monaghan, Topeka, Kan- s, says that "The model bill will no ubt be introduced in 1959, after it definitely decided if the changeover to be made, by industry as well as ates."

Robert Reichert, director of plant dustry in Idaho, says that the ex- tenson service and his own depart- ment will conduct meetings starting in February. "At this time, the fertilizer grades from oxide to elemental will be discussed. If and when these changes are made, it will be an advantage to the farmers in Idaho," he observed.

From Nevada comes word that "We do not anticipate unfavorable reaction from the legislature; however we have a number of other important matters before this session and, as target date is 1960, decided to wait until next session for action. Nevada imports most of its fertilizer and is dependent upon adjacent states for supply and action."

Parks A. Yeats, head of the seed, feed and fertilizer division of the Oklahoma department of agriculture, comments that "There is nothing wrong with the model bill. It's a matter of do we want elemental guarantees or shall we remain status quo. Soil scientists, agricultural colleges, extension workers, etc., want elemental guarantees, and it appears that a majority of the industry does not. Personally, I hate to see the control officials caught in a 'squeeze' because we have to work with both groups.

"I am sure in many states it is apt to be a political fight to get it passed in the legislature without industry's whole-hearted support.

"I, personally, would like to see the guarantees on an elemental basis, although we can carry out the fertilizer law with the guarantees either way. But I would dislike having to get into a political hassle in our state over this thing. That would be bad for everyone."

J. F. Fudge, Texas state chemist, reports that under the State's current law, "We can permit the labelling to show both the elemental and oxide guarantees." The legislature is described as being "undecided" about taking action on the bill.

Elmer Christensen, Utah state chemist, reports that "A recent state-wide meeting of agronomists, agricultural chemists, farmers, and industry people indicated that most were in favor of change to elemental. Some were non-committal, but no one definitely opposed," he said. The legislature, however, is reported to be "uninformed" about the bill.

Wisconsin's legislature, now in session, is "probably not at all familiar with the proposal," according to W. B. Griem, of the state department of agriculture. "No decision has as yet been reached as to whether the new model fertilizer law will be introduced at our current legislative session," he added.

Wyoming indicated that "We believe our present law is adequate." Its legislature is in session, but no plan is under way to introduce the model bill, it is indicated.

NITROGEN INSTALLATION

AHOSKI, N.C. — William Charles of Union is setting up a liquid nitrogen distributing point here.

Record Attendance at California Weed Conference Hears Reports on New Approaches to Control Problems

FRESNO, CAL.—Controls for unwanted vegetation in crops, along roadsides and on industrial sites were among the chief topics discussed at the California Weed Conference, held here Jan. 22-24. Speakers on the program included farm advisers, landscape architects, industry representatives and experiment station personnel.

A record attendance of 600 was posted at the opening session. Dr. Vernon I. Cheadle, head of the botany department, University of California, Davis, was elected president of the conference, to succeed James W. Koehler, Pomona, California Department of Agriculture official.

Other new officers are J. T. Vedder, Sunland Industries, Inc., Hanford, vice president; Dr. Oliver A. Leonard, University of California botanist, secretary, and Bruce Wade, Shasta County agricultural commissioner, treasurer.

Mr. Koehler presided the opening sessions Jan. 22. A discussion of weed problems of the San Joaquin Valley was held, as was a panel review of agricultural weed problems.

John I. Polson, Fresno County department of agriculture, told the group that farmers in Fresno County have the "best morning glory and primary noxious weed control program in the State." He said that the county furnishes 50% of the materials up to and including two acres, and 100% of all cost of application up to and including ten acres.

The panel speaker reported that use of the herbicide CMU in cotton fields that had been infested with Russian knapweed and morning glory has proven satisfactory. In this new procedure the farmer is asked to knock down levees around the infested plots, then the department treats all the infested plots, which the farmer follows up by disking, irrigating, redisking and planting.

When the cotton is ready to irrigate, he lists through the infested plots the same time he lists the cotton fields. Every time the cotton field is irrigated during the summer, this extra water helps the CMU kill the new seedlings as they germinate.

Mr. Polson said the old method was to retain the high levees around the infested plots, whereby irrigating of the infested plots was unsatisfactory. Also re-routing of water and equipment around these infested plots that had high banks added extra labor costs to the farmer, he explained.

Another panel speaker, Fred Jensen, University of California farm adviser in Tulare County, described successful control with monuron and diuron.

With four pounds of the chemical per acre, Mr. Jensen found that diuron was more effective than monuron in killing annual weeds if observed over a period of several months. Applications made during the dormant period or early in the spring produced the best results, he said.

"Late spring or summer applications of monuron and diuron produced erratic weed control and sometimes injured the vines," Mr. Jensen said. "At equivalent dosages, less damage was obtained with diuron than with monuron.

"Dormant band application of either material did not produce damage until rates were increased to 32 lb. an acre. But four pounds an acre seems to be the most practical application rate."

A session on weed problems on non-cropped areas was presided over by G. F. MacLeod, Sunland Industries Fresno. Appearing on this portion of the program, in addition to Mr. MacLeod, were Robert L. Kent, San Joaquin; H. N. Bosworth, California division of highways, Sacramento, and George A. Meyer, Chipman Chemical Co., Palo Alto.

Mr. Meyer's topic covered weed control on industrial sites. He pointed out that in many ways, industrial weed control is closely related to other general types of weed killing activity. The big difference, he said, is that industry almost always wants a soil surface completely devoid of any growing vegetation.

Mr. Meyer said the problem of accomplishing complete sterilization has been approached by a variety of methods over the years. In enumerating some of these ways, he said: "One popular method is the 'one shot' heavy application of a reliable soil sterilant with the expectation that later 'touchup' light applications will be made as spotty new growth may occur."

"Another method gaining popularity in industry is making annual maintenance 'dosage' applications at a lighter rate. Particularly regarding the latter method, industry is finding considerable advantage in applying combinations of soil sterilants so they may gain benefits from different types combined."

Mr. Meyer stated that industry can benefit in a number of ways by adopting planned programs of weed control. Some of the most obvious benefits of such programs, he said, are reduction of fire hazard by eliminating seasonal dead growth, better drainage, accessibility to open air storage areas, reduction of rust developing conditions in outdoor equipment storage and plain 'good housekeeping' in a plant yard area."

He added that best of all, the job can be done more economically and more efficiently than by "outmoded hand methods."

Mr. Kent described the role of weed control in the maintenance and operation of irrigation systems. He declared that probably 50% of the "new" weed infestations on farms served by irrigation systems result from weed infestations on the canal banks of those systems.

The water official pointed out that seeds scattered from weeds along ditch banks find perfect dispersal media in irrigation water. He declared the problem arising from such dissemination of weed seeds is over and above the control of aquatic weeds that retard and disrupt the flow of water for irrigation purposes.

Mr. Kent said that the weed control goal of irrigation systems is two-fold, namely: (1) eradication of such noxious weeds as Russian knapweed, morning glory, white horsenettle, Johnson grass and Bermuda grass along canal or ditch banks, and (2) the control of aquatic weeds in the canals and along their banks.

Mr. Bosworth pointed out that problems of the highway department in regard to weed control include a fire hazard control program on some 3,800 roadside miles in California, noxious weed control in all counties of the State, soil sterilization around highway structures to eliminate more costly hand methods of control, selective weed control in landscaped projects, and chemical control of natural woody roadside growth which would encroach into the travelled way.

He added that it has been the policy of his department for many years to cooperate actively and financially with organized and directed weed control programs in local areas and statewide.

Brush control means much to the cattleman, C. E. Metcalf, deputy state forester, California Division of Forestry, Fresno, told the delegates at the conference. He stated that he was speaking not only as a forester, but also as a rancher who has owned and managed ranch properties since 1916.

Noting that the brush problem is not new, Mr. Metcalf documented his declaration by quoting an advertisement in an 1885 newspaper. The advertisement was designed to attract settlers to the San Joaquin Valley and stated "the soil is rich, but the greater part of the hill land is covered with a dense growth of chamise, manzanita and other brush which must be cleared before the land can be cultivated."

The problem of brush control is still with the ranchers, the forestry official declared, and is being met by them, primarily on those lands upon which there has been a recent encroachment of brush, by mechanical and chemical means and by the controlled use of fire.

Ranchers and homeowners have a choice of chemicals to use against poison oak, Oliver A. Leonard, University of California botanist, declared.

Both 2,4-D and the newer weed chemical amino triazole will kill this pest, Mr. Leonard told the group at the final session of the three-day meeting.

Around the home where other plants are sensitive to 2,4-D, he suggested spraying poison oak with amino triazole. Four pounds of the commercial material in 100 gallons of water should be sprayed on the leaves anytime after they have become fully expanded until the leaves begin to turn reddish.

On rangelands, either 2,4-D or brush killer—a mixture of 2,4-D and 2,4,5-T—was recommended.

(Continued on page 19)

WORLD REPORT

By GEORGE E. SWARBRECK
Croplife Canadian and Overseas Editor

Japanese Potash

The Japanese Ministry of International Trade and Industry is making progress in its project for the establishment of a plant for the domestic production of potash fertilizers. Several firms, trade sources state, have been invited to participate.

Currently, all Japan's potash fertilizer requirements have to be imported.

A new method of production, it is claimed, has been successfully tested. Citric-soluble potash fertilizer can be obtained with about 28% potassium content by processing dolerite. This material is available in the country.

The ministerial plan involves the establishment of a company with the capital being supplied jointly by the Japan Development Bank and interested firms. Production, it is hoped, can begin in late 1958 or early 1959 and the initial annual capacity at which the sponsors are aiming is 50,000 tons.

Indian Plant

The Sindri fertilizer plant in India, a government-sponsored project, exceeded its sulfate of ammonia production target for 1956 by 1,725 tons. The offtake was 331,725 tons, more than 10,000 tons better than the 1955 figure. The plant, however, is geared to produce 350,000 tons and the Indians hope to hit this peak by the end of 1957.

The production of ammonia in 1956 hit an all-time high at 90,847 tons. Deliveries of sulfate of ammonia from the factory during the past year totaled 374,000 tons, the highest since 1951.

Chipman Expands

The Canadian firm of Chipman Chemicals, Ltd., a company jointly owned by Canadian Industries, Ltd., Montreal and the Chipman Chemical Co. of New Jersey is expanding its development and control facilities.

A new laboratory building and warehouse are going up alongside Chipman's pesticide plant at Hamilton, Ont. The cost is reported at $70,000. Completion is scheduled for April.

The laboratory building will be made up of development and control laboratories and a pilot plant equipped for milling and grinding. The company's chief chemist will have his headquarters there. The official controls the formulation of products at plants in Winnipeg, Moose Jaw, Buckingham and Hamilton.

The warehouse has been specially designed for herbicides and will be separate from existing storage for other products.

South African Fisons

Fisons (Pty.), Ltd., the associate company of Fisons, Ltd., the British fertilizer firm, in South Africa, is to build a fertilizer factory at Sasolburg, Orange Free State. The cost is assessed at $5.6 million. Production target is 200,000 tons of superphosphate a year. In addition, granular compound fertilizer will be made to serve the growing demand in the Free State and in the Transvaal. Officials say it is the first superphosphate plant in South Africa to be located away from the coastal area.

Completion of the project is expected in 1959. At first, phosphate rock will have to be imported, but there are prospects that local supplies will eventually become available when work begins on the deposits at Phalaborwa in Northern Transvaal.

Budworm Fight

Plans are progressing for the continuation of the fight against budworm in the forests of northern New Brunswick, Canada. Cost of the campaign will be $3.5 million, twice the amount spent in 1956.

More than 6 million acres of forest have been attacked by budworm. Operation of the program is a joint endeavor of the federal and provincial governments and of firms engaged in the lumber business.

Handling the campaign is Forest Production, Ltd., and it has already sprayed insecticide on 5 million acres of forest.

Briefs . . .

Typpi Co. is erecting a plant for the production of mixed fertilizer at Oulu, Finland. Operations will begin in the summer of this year. Productive capacity is 65,000 tons annually.

* * *

Australia wants to export ammonium sulfate. Production since 1955 has been running at record levels but demand fell away last year. Unless export outlets are found, production will have to be cut.

* * *

During the first nine months of 1956, Italy exported 443,575 tons of fertilizer, a jump of more than 22% over the corresponding period of 1955. Biggest customers were China and India.

Union Bag to Build Hardwood Pulp Mill

NEW YORK — Union Bag-Camp Paper Corp. directors have approved a multi-million dollar expansion and modernization program for the company's Savannah plant.

Alexander Calder, chairman, said plans are to install a new paper machine and complete equipment for a new hardwood pulp mill. The program will get underway immediately and is scheduled to be completed in three to four years. The new facilities will boost the plant's daily pulp capacity by approximately 3[illegible] tons. Mr. Calder said that Union Bag has over 5,300 persons on its Savannah payroll, and that the working force will be increased by several hundred upon completion of the program.

Special Merchandising Section

Better Selling

Marketing News and Features

Need for Boron, Sulfur Emphasized at Meeting of Western Oregon Dealers

CORVALLIS, ORE.—A possible need for more boron and sulfur in the Willamette Valley and a definite need for a greatly expanded use of commercial fertilizer materials on Oregon farms were spotlighted at a recent meeting of the Western Oregon Fertilizer Dealers Assn. held at Oregon State College.

More than 100 commercial fertilizer dealers and field men from over the state heard OSC research men cite findings showing many Oregon fields in need of the fertilizer element, boron. Boron hasn't been used by many of the state's farmers to date, but T. L. Jackson, OSC soil scientist, said there appears to be a need for an expanded use of this material in the future.

Reporting on pasture fertilization experiments carried on in the valley, Mr. Jackson said he often obtained a definite response to boron in pastures containing legumes. He recommended the addition of 1½ lb. of actual boron per acre every other year, where other fertilizers containing boron aren't added to legume fields.

Boron deficiencies have also been found in western Oregon pear and apple orchards, reported O. C. Compton, OSC horticulturist. To correct the twig dieback, blossom blast or brown core symptoms that often accompany the deficiency, Mr. Compton recommended ½ lb. of agricultural borax be applied and worked into the soil in the drip-area under each tree.

Both men emphasized, however, the need for a good soil test or a positive identification of boron deficiency symptoms by a county agent or fertilizer field man before boron is applied to a field. Only very small amounts of boron are needed, they said.

A growing need for sulfur in the valley was also reported by Mr. Jackson. He said he has obtained a response from sulfur on legumes throughout most of the state. Colored slides of a corn fertilization experiment in Douglas County clearly illustrated a response to sulfur by this crop.

The need for a greatly expanded use of fertilizers in the state was emphasized by L. A. Alban, soil scientist in charge of the OSC soil fertility laboratory. He pointed out that when fertilizer needs in the state, based on soil tests carried out in the soil fertility laboratory, are compared with the actual sale of fertilizer and lime, Oregon farmers are using only about a fifth as much commercial fertilizer as they should for optimum crop production.

Mr. Alban also discussed the need for boron in the state. A partial survey of Clackamas County farms was carried out last year to see how widespread the need for boron might be. In this survey, over 32% of the fields checked tested very low in boron. Mr. Alban said this indicates it would be wise for farmers to have a boron test run on fields to be used for pasture or forage production.

First year results at the Washington County fertilizer demonstration farm, a project sponsored by the Pacific Northwest Plant Food Assn., were reported by Palmer Torvend,

(Continued on page 14)

AT OREGON MEETING—Shown above talking over results of the Oregon fertilizer demonstration farm are, from left to right, Palmer Torvend, Washington County, Oregon extension agent; Grant Braun, Portland, American Potash Institute, chairman of the Pacific Northwest Plant Food Assn. Soil Improvement Committee, and T. L. Jackson, Oregon State College soil scientist. The huddle took place at the meeting of the Western Oregon Fertilizer Dealers Assn. at Oregon State College.

SHOP TALK OVER THE COUNTER FOR THE DEALER

By EMMET J. HOFFMAN
Croplife Merchandising Editor

Since 1940 there has been a five-fold increase in farm expenditures for custom work, such as spraying, fertilizing, dusting, seeding and harvesting, said an agricultural economist at a recent dealers' meeting. He attributed the growing demand by farmers for custom work to: (1) Inability to get hired help to do the job. (2) It keeps down the equipment investment by farmers which, in many cases, has become a financial burden. (3) It is a convenience. (4) Proper timing is possible in most instances. (5) Increasing farm sizes makes it economically sound to hire some custom service. (6) It can save time.

A number of surveys have shown that custom work has expanded 400-500% in many areas of the U.S. in the last 15 years. Indications are that the trend will continue. Dealers who are in this line of work will admit that it requires considerable "know how" and skill to do a good job. But the rewards are worthwhile if the dealer knows his custom work program thoroughly, has a capable operator, asks a fair price which leaves him with a worthwhile profit margin and keeps careful records so that he knows where he has been and where he is going.

Custom service can be another tool available to the farm supplier which will enable him to adjust to the demands of his customers and open up new avenues of profits.

Farmer Meetings

Fertilizer dealers are generally agreed that the personal contact type of selling is much more valuable than the non-personal contact for getting farmers to adopt improved fertilization practices. Surveys back up the practical experiences of dealers in emphasizing the personal contact type of selling.

In one survey, the four most reliable types of activities for promoting the adoption of improved fertilization practices, in order of importance, were: Farmer-dealer meetings, demonstration plots, helping farmers with soil tests and field trips.

Other activities, ranked in order of their importance following the four main ones listed above, were: Fertilizer schools for farmers, radio programs, bulletins and pamphlets and exhibits.

Farm Records A "Must"

The day will come, predicts one farm expert, when every farmer and rancher will keep accurate income and expense records, instead of waiting until the end of the year to see if there is money left in the checking account.

The farmer of the future must have the technical know-how; he must keep up with rapidly changing techniques which have revolutionized farming in our lifetime, this expert says. It is just as important for a farmer to keep records as it is for the businessman, because every farmer is a businessman. A farmer with accurate records can readily spot which of his operations are profitable and those which need attention in order to put them back into the profit column.

By RAYMOND ROSSON
Croplife Feature Writer

Mr. Businessman: Ask your farmer friends some questions like these . . . Is your soil tired . . . Is the water in the hen house liquid or solid . . . Aren't the flower and seed catalogues pretty . . . Break your land now; avoid the rush . . . How many of your acres are on relief . . . Are you fussy about the kind of seed you plant?

Plant food, plus toil, plus brains, give a homestead its value . . . Don't let the good soil go with the wind and rain; it is hard to get back.

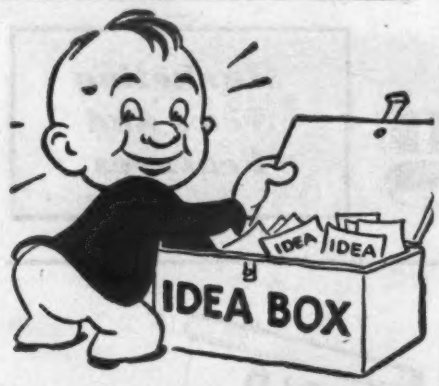
Are the children happy on the farm . . . Hens and cows are your rainy-day cash registers . . . If it won't hold water it isn't very good dirt . . . If your cows could talk, would they order timothy hay and shucks for breakfast . . . Worry is the rent you pay on the crops you do not produce . . . Gullies down a hillside are like the golfer's score, "the more you get, the less you got."

If farms could choose their owners, would your farm choose you . . . What kind of cows will the heifers be . . . As plant food goes, so goes your profit . . . "Go to grass" or "Grow to grass," it doesn't make much difference . . . Use enough of the right kind of plant food under your row-crops, hay and pasture and grass won't grow in the streets of your towns.

Was that your corn drill and baler we saw in the weather the other day . . . Better are a few acres well managed than a great boundary given to waste . . . To sweeten the soil is the beginning of good farming . . . If at first you don't succeed, lime and then sow clovers . . . Promise the wife right now, you'll work the garden Monday mornings, instead of Saturday afternoon.

It takes twelve months and sometimes longer to correct a mistake on the farm; be careful . . . Let us endeavor to so farm, that when we come to die, even the soil will be sorry . . . A good pasture fitly treated with lime, nitrogen, phosphorus and potash, produces butterfat of gold in pictures of milk checks.

"And I want to hear a steady tinkle of those bells or I'm coming out to find why you're just standing around in the warehouse."



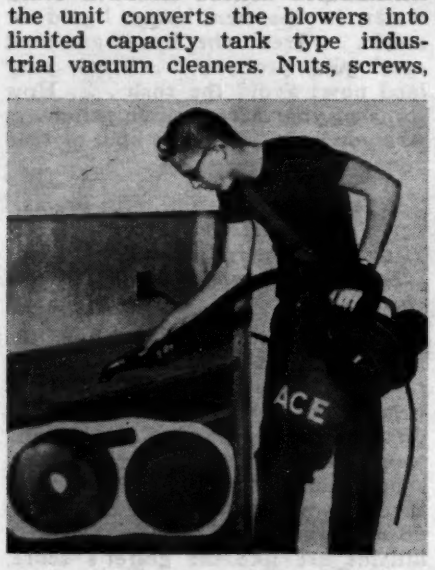
What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 5645—Blower Attachment

A new attachment for Ace portable electric blowers is designated as Fangard attachment No. 226, announces the Ace Co. Used in connection with other available suction attachments the unit converts the blowers into limited capacity tank type industrial vacuum cleaners. Nuts, screws,



washers and scrap can be picked up safely without danger of damaging the fan or fan housing, it is claimed. "The complete portability of this type unit is important where cleaning is done from ladders, in elevator shafts or other places impossible to reach with conventional tank type industrial vacuum cleaners," say company officials. A catalog is available without charge. Check No. 5645 on the coupon and mail it to this publication.

No. 6532—Bulletin

The Velsicol Chemical Corp. has issued a new, 16-page bulletin covering technical aspects of the firm's line of solvents for herbicides and insecticides. The bulletin is designed as an aid to formulators in selecting appropriate solvents for the various insecticide and herbicide formulations. Velsicol claims the following specific properties of the solvents covered in the bulletin: (1) Chemical compatibility with herbicides and both synthetic and botanical insecticides. (2) A high solvency for insect toxicant materials and such herbicides as the 2,4-D and the 2,4,5-T esters. (3) Solutions of the insect toxicants and herbicides are stable over a wide temperature range. (4) The solvents have high flash points. (5) The solvents are non-corrosive to metals. (6) The high boiling range of these solvents (low volatility) favors the residual toxicity of the more volatile insecticides. For a copy of technical bulletin 214, "Velsicol Insecticide and Herbicide Solvents," check No. 6532 on the coupon and mail it to Croplife.

No. 5643—Equipment Catalog

A new 28-page sales catalog is now available to acquaint dealers and prospective dealers with the 1957 Midland Co. line. The new catalog covers in detail the new 3.6 H.P. riding rotary mower, four rotary mower models, 2 to 2¾ H.P., and eight tillers, ranging from 2¾ H.P. on up to 6.8 H.P., including riding tiller models. Interested dealers may obtain their free copy of the catalog by checking No. 5643 on the coupon and mailing it to this publication.

No. 5636—Management Booklet

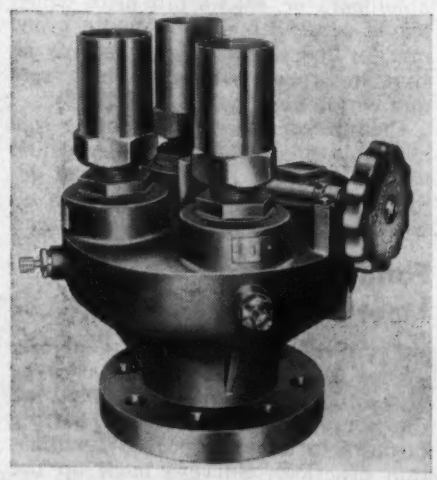
Dun & Bradstreet, Inc., has available a free booklet titled, "The Pitfalls in Managing a Small Business." The booklet contains a case history report of the more common problems facing businessmen today. Secure a copy by checking No. 5636 on the coupon, clipping and mailing it to this publication.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6533—Relief Valve Manifolds

Ample safety relief capacity for larger anhydrous ammonia bulk storage tanks is claimed in a new pair of relief valve manifolds introduced by the Bastian-Blessing Co. Desig-



nated the "RegO A7564 and A7565 Relief Valve Manifolds," each model has a cast steel body with three ports and three RegO AA3135 aluminum relief valves. According to the manufacturer, any two of these relief valves provide adequate relief capacity for all standard 18,000 and 30,000 gal. NH_3 tanks. Furthermore, it was stated, any one of the three valves can be replaced while the tank is under pressure, avoiding necessity for evacuating the tank while removing valves for replacement or testing. The company also states that each new manifold has ample openings through the manifold body to assure negligible capacity loss. Rate of discharge at the various relief valve settings is said to be 11,200, 11,640 and 12,160 CFM of air. The manifolds differ only in their bolt circle diameter. Secure additional details by checking No. 6533 on the coupon and mailing it to Croplife.

No. 6530—Portable Steel Bin

A new portable steel bin for storage and shipment of granular or powdered materials has been announced jointly by the Delta Tank Manufac-

turing Co., Inc., and the chemicals divisions of the Food Machinery & Chemical Corp. The multi-purpose weatherproof bin is trade-named the "Deltainer" by the Delta firm and forms the basis of Food Machinery & Chemical Corporation's "Uni-Hopper" system for shipping. "When shipped by truck or on specially designed freight cars, the bins are considered part of the carrying vehicle and thus qualified for transportation without freight charges on the bins," according to spokesmen for the companies. Each container is removable for loading and unloading purposes. Three sizes of containers—36, 65 and 88 cu. ft. capacities—are being built. Units may be stacked atop each other; 28 units will fit two abreast on special railroad cars and 10 will go aboard the average truck trailer bed, the announcement states. Two inverting machines have been designed to permit dumping by one operator. The units can be hermetically sealed so that many hygroscopic, hazardous or toxic materials may be shipped with safety, states the announcement. Secure complete details by checking No. 6530 on the coupon and mailing it to this publication.

No. 6529—Soil Fumigant

New literature has been prepared by the Stauffer Chemical Co. about its soil fumigant, trade-named, "Vapam." The product will control perennial and annual broadleaf weeds and grasses including germinating seeds, soil fungi causing seed rot, damping-off and wilt, nematodes that attack plants and soil inhabiting insects, according to the literature. The literature has sections devoted to a description of the product, where it can be used, rate of application, how to use it, special problems in usage and safety precautions. Secure the literature by checking No. 6529 on the coupon and mailing it to Croplife.

No. 5624—Conveyor

The Burrows Equipment Co. has developed a conveyor, called by the trade name, Cost Cutter, for the feed and fertilizer trade. The conveyor has either aluminum, steel or stainless steel frame and is available in 8-18 in. belt widths and lengths of 4-40 ft. One of the 22 standard undercarriages can meet any special application, it is claimed. The streamlined light weight unit

Send me information on the items marked:

☐ No. 5615—Seed Protectants	☐ No. 6528—Attachment
☐ No. 5624—Conveyor	☐ No. 6529—Soil Fumigant
☐ No. 5643—Catalog	☐ No. 6530—Steel Bin
☐ No. 5645—Attachment	☐ No. 6531—Monthly Bulletin
☐ No. 5636—Booklet	☐ No. 6532—Bulletin
☐ No. 6525—Soil Product	☐ No. 6533—Valve Manifolds
☐ No. 6526—Nematode Chart	☐ No. 6534—Weed Control
☐ No. 6527—Additive	☐ No. 6535—Crow Repellent

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as no sharp corners and features a irect chain drive from gear motor o sprocket which eliminates the use f V-belts and countershafts, it is nnounced. To secure a 4-page book- et and complete information check No. 5624 on the coupon, clip and ail it.

No. 6534—Weed, Insect Control

The Chemical Insecticide Corp. as prepared literature on its prod- ct, called by the trade name, Chem- Vape, recently introduced. The prod- ct is called a "one shot treatment or the control of weeds and soil orne insects and diseases." It is a ithiocarbamate liquid and "one ap- lication properly applied prior to lanting will insure effective control f the various grasses and broad leaf eeds including the seeds of these egetable pests. This same applica- ion will also destroy nematodes, in- ects and fungi which are found in he soil," states the company's an- ouncement. The product is said to ave a low toxicity to warm blooded nimal life and leaves the soil in a elatively short period of time. It is vailable in liquid form packed in 5-, 30-, 5- and 1-gal. containers. Se- ure the literature by checking No. 534 on the coupon and mailing it o Croplife.

No. 6528—Tractor-Shovel Attachment

The Frank G. Hough Co., subsidiary f the International Harvester Co., nnounces that the entire line of four- wheel drive "Payloader" tractor- hovels will offer "Drott 4-in-1"

uckets as optional equipment. The dentification "4-in-1" implies that the ttachment can be used as shovel, lamshell, scraper or bulldozer, ac- ording to the company's announce- ment. Additional information may be btained by checking No. 6528 on the oupon. Clip and mail it to Croplife.

No. 6531—Monthly Bulletin

The Gates Rubber Co. has a month- y publication, Tank Talk, which is vailable without charge to those in- erested. The bulletin contains infor- ation about fertilizer solution stor- ge. To secure the bulletin monthly heck No. 6531 on the coupon and ail it to Croplife.

No. 6535—Crow Repellent

A deer and rabbit repellent which s marketed by Larvacide Products, nc., has been found to be most ef- ective as a crow repellent, accord- ng to advice from the company. The use of Larvacide's Z.I.P. for rows first became of interest in con- ection with experimentation by the Connecticut agricultural experiment tation which was determining meth- ds of reducing losses in the produc- tion of hybrid corn. Since then work also has been done at Massachusetts and Michigan experiment stations. Z.I.P. treatment of corn seed before planting will discourage crows from pulling germinating seedlings, company officials state. Information concerning the use of the product, method of application and other data may be had by checking No. 6535 on the coupon and sending it to Croplife.

No. 6527—Fertilizer Additive

A product called "FN-513," recommended as a fertilizer additive, has been announced by the agricultural division of the Ferro Corp. It should be mixed with fertilizer in quantities ranging from 30 to 50 lb. per ton, depending on the prevailing rates of fertilizer application. The product "maintains the fundamental slow-soluble safety principle of FTE" (fritted trace elements), according to the company's announcement. It contains 2.8% boron and 4.8% manganese. Secure complete details by checking No. 6527 and mailing the coupon.

No. 6525—Soil Product

The Smith-Douglass Co., Inc., is producing a product trade-named Nutro Soil Corrector. Company officials say that the product is "a combination of plant food elements with neutralizing qualities for sour and mineral deficient soils" and is intended for home and garden use. "An increasing tendency toward sour and mineral deficient soils prompted research which developed the new product," company officials said. Secure complete details by checking No. 6525 on the coupon. Clip and mail it to Croplife.

No. 6526—Nematode Chart

A new nematode chart intended to be used as a quick and handy reference to more than 50 species of nematodes, their common names and the plants they attack has been prepared by the Shell Chemical Corp. The chart can be used on the wall or underneath the glass top of a desk. Listed on the chart are cyst forming nematodes (cysts cover the eggs), endoparasitic nematodes (those that enter the root tissue or permanently attach themselves to it) and ectoparasitic nematodes (those that feed on the root surface and normally do not enter the root tissue). Included also are above-ground feeders. The chart may be secured without charge by checking No. 6526 on the coupon and mailing it to Croplife.

No. 5615—Seed Protectants

Two seed protectants for slurry application are now available from Panogen, Inc. They are trade named Panoram D-31 and Panoram 75 and are said to possess excellent suspension qualities. Panoram D-31 is a combination insecticide - fungicide and is recommended as a seed treatment for corn, soybeans, sorghum, beans and peas. Active ingredients are thiram and dieldrin. Thiram protects against various seed and soil-borne diseases, while dieldrin protects seeds and seedlings from injury by wireworms, seed corn maggots and other destructive soil-dwelling insects. Panoram 75 is a seed disinfectant for treating corn, rice, sorghums, soybeans, grasses, legumes and vegetables. Active ingredient is thiram. The manufacturer says Panoram 75 can be expected to increase stands and improve yields by protecting from seed and soil-borne diseases causing seed decay, damping-off, seedling blight and root rot. Secure more complete details by checking No. 5615 on the coupon and mailing it to this publication.

California Agchem Employment Steady

SAN FRANCISCO — Employment in both the fertilizer and the insecticide and fungicide divisions of the chemical industry held relatively steady throughout the first half of 1956, according to a special report prepared for Croplife by the California State Department of Employment.

Fractional gains in fertilizer manufacturing plants were registered each month between January and June of last year over the same period in 1955, but the average for the half year remained at 1,400 wage and salary workers, the latest period for which figures are available.

The average number of workers each month making insecticides and fungicides climbed from about 900 to 1,100 between January and June, 1956, which was about the same as the 1,000 registered during the July through September period of the previous year. Except for the summer months of 1955, no monthly figures were compiled for this division of the industry by the Department of Employment until the beginning of 1956.

The number of manufacturing firms in the fertilizer business in California was about 85 last year, and in insecticides and fungicides about 30, the department reported.

EARLY BLOOMING

CORVALLIS, ORE. — An Oregon State College horticulturist reports he has been able to make a biennial plant produce flowers during its first year. L. T. Blaney used gibberellic acid, applied near the growing tip of the plant, to cause a foxglove plant to send up a flower stalk. Blooms recently appeared on the flower stalk.

NEW MEXICO SHIPMENTS

STATE COLLEGE, N.M. — New Mexico fertilizer shipments during the last three months of 1956 totaled 2,861 tons, according to the state Feed & Fertilizer Control Office. The total included 1,537 tons of 45% superphosphate.

Knowledge of Merchandise and Of Farming Area Brings Sales Growth to Colorado Retailer

By JESS F. BLAIR
Croplife Special Writer

The Agricultural Fertilizers Co. of Rocky Ford, Colo., was started in 1950 and managed to spread nearly 40 tons of fertilizer on the area farms that year.

The new business was a sort of experiment by Ralph F. Seamans, who had had several years experience in raising gladiolas commercially. He knew fertilizers and plants, and saw an opportunity to give farmers a complete fertilizer service. He would equip tractors with spreading attachments, furnish the fertilizer and put on the kind and amount needed.

However it wasn't easy. Farmers were skeptical. It wouldn't pay off, they said, and in particular they were afraid of liquid fertilizer. They had heard it was volatile and would evaporate from the soil like a damp towel in the summer wind.

These objections were finally overcome, as proved by the 164,000 lb. of available nitrogen and 104,000 lb. of available phosphorus which the store put out this last 12 months.

"I soon found out that just telling farmers my services would pay off didn't mean a thing," Mr. Seamans said. "So we set up a lot of experimental plots. I'd persuade a farmer to try five or 10 acres, then try to find another one several miles away who would do the same. Each plot represented a long and determined sales talk, and the test strips were scattered up and down the Arkansas River Valley for many miles, where people could see and hear about them.

"The first year we got some good production off these fertilized plots, which put us over the hump from a selling angle. Now about 80% of the orders come in over the telephone, though I do have one outside salesman who works in new areas and tries to sell farmers who haven't yet been convinced a complete fertilization program will pay off."

After that first year, Mr. Seamans knew he had started a good thing, and had to hurry along to keep up with orders. Now he has six rigs, three mounted on tractors and three on trucks. There is a good reason for the truck rigs, as based on experience with the slow-moving tractors.

"Suppose we get an order to fertilize 20 acres of land that is 50 miles up the valley," he said. "We send a man and truck to save time and expense. For long drives and small or hard-to-get-to acreage, we need the trucks. For nearby fields or a large number of acres, we use the tractors."

Although most insecticides in the Arkansas Valley are applied by airplanes, Mr. Seamans found a profit-maker in a small truck-powered rig which sprays yards, gardens, ditches and small fields. This is kept busy all the time during growing season.

His charge varies with the distance from town, size of field, and accessibility to the farm. Ordinarily he gets $1.50 per acre for pre-planting fertilization when the ground is bare. It may be more during the crop season if the size of plants interferes with application. No matter what the charge will be, however, this is agreed upon before the job is undertaken.

Since much of this work comes in spurts, the machines are ready to run 24 hours a day, requiring two or three operators. The dull season is from the first of January till March. Then a big rush starts in the spring and seldom lets up till mid-summer.

This last year Mr. Seamans began to put fertilizer on fallowed wheat land after Aug. 15, and this is taking the slack out of another dull period. He thinks autumn fertilizer will pay dividends, and is now trying to prove it on several plots.

Ordinarily he puts on nitrogen and phosphoric acid at the same time, using the same trench dug by the tractor but with separate nozzles one in front of the other.

The thing that really got the company off to a good start was the extreme care taken in the soil analysis and fertilizer recommendations. While Mr. Seamans has had access to dozens of soil samples, he relies also upon the farming history of the field.

He talks to the farmer and gets the crop history back to three and preferably five years before making recommendations.

"The main thing to keep in mind," he said, "is that that farmer must make money or our services aren't worth a dime. If I know what fertilizer he used the last few years, how much and what crops were grown, then I know what he needs. A field in corn three years wouldn't require the same fertilization as one two years in wheat and one in alfalfa.

"Because we've always insisted on these facts before driving the rigs onto the fields, we've got about 100% increase of crops from our services. With such a record, our selling job is easy. But if we recommend something he doesn't need and the crop increase doesn't show it, then we may lose a customer."

Mr. Seamans' main sellers are urea, anhydrous ammonia and phosphoric acid. There may be a need for other plant nutrients, a subject that he is now studying. If there is such a need, he will soon be applying it with his tractors and trucks.

Another way of selling to a skeptical farmer is by leaving a plot of unfertilized field at the time the first fertilizer application is made. By this the farmer can make a comparison, and determine with the first crop just how much fertilizer pays off.

Besides the fertilizer he spreads with his own equipment, Mr. Seamans furnishes farm chemicals to an aerial contractor in another town in eastern Colorado. This amounts to considerable tonnage and brings a profit to the firm.

He says he could put out even more tonnage through his own applicators if he didn't keep a tight rein on credit. He avoids credit by giving a 5% discount for prompt cash payment. He is striving for a steady, sound growth, and thinks that too much credit business is in direct opposition to this.

In summing up the growth of the store, Mr. Seamans said: "One thing that's important is to keep the machinery moving without delay. Occasionally we get an order from some farmer who wants us at his place by daylight next morning. Because we stress a three-day notice in advertising and personal contacts, we've managed not to lose any customers.

"Another thing, a man must know his products both practically and technically and have a general knowledge of climatic, soil and crop conditions in the area. Fortunately I had a little knowledge of this, but if I hadn't, then I would hire me a college-trained man who had a nice personality and ambition to succeed. This is one business where a guess is not enough. You've got to know it thoroughly to stay ahead of your competition."

Liquid Tests

FORT COLLINS, COL. — Liquid fertilizers will be tested by agronomists with the Colorado A&M Experiment Station under terms of a grant received from the Allied Chemical and Dye Corp. Dr. W. R. Schmehl, professor of agronomy, will be in charge of the project, with field work to begin in the spring. Amount of the grant is $2,000 per year for two years.

Gloomicides

The boy and girl were out on the highway when the car broke down. He didn't seem to mind and wanted to make love. "My kisses will put new life in you," he urged.

"Then for goodness sake," the girl replied sweetly, "get out and kiss the car."

★

Two business executives were in the woods hunting for moose. "I'll sound my moose-call horn," one said confidently, and did so. "There! That'll bring 'em."

But no moose appeared—instead, dozens of mice came running. The executive who had sounded the horn stared, then uttered an imprecation. "That secretary of mine," he fumed. "I ordered a moose-call by mail—and she had to make a typographical error."

★

To instill into the mind of his son sound wisdom and business precepts was Jones senior's earnest endeavor. He taught his offspring much, including the advantages of bankruptcy, failures, and fires. "Two bankruptcies equal one failure, two failures equal one fire," etc. Then Jones junior looked up brightly.

"Father," he asked, "is marriage a failure?"

"Well, my boy," was the parent's reply, "if you marry a really wealthy woman, marriage is almost as good as failure."

★

Speaker: "Who was braver than Lancelot, wiser than Socrates, more humble than Lincoln, wittier than Mark Twain, and more handsome than Apollo?"

Voice from audience: "My wife's first husband."

★

The honeymoon is over when the bridegroom who promised to tell his bride everything finds out she already knows everything.

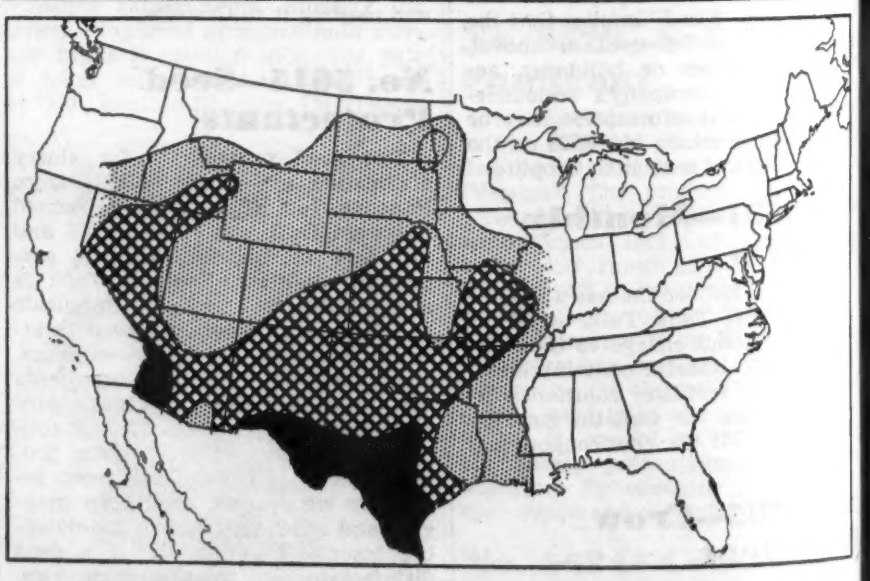
★

Golly, the nostalgia a man can stir up by cleaning out the attic—bustles, buggy-whips, kerosene lamps, and 3-D glasses.

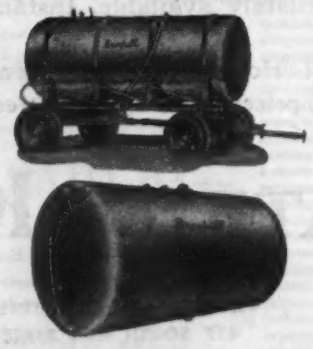
★

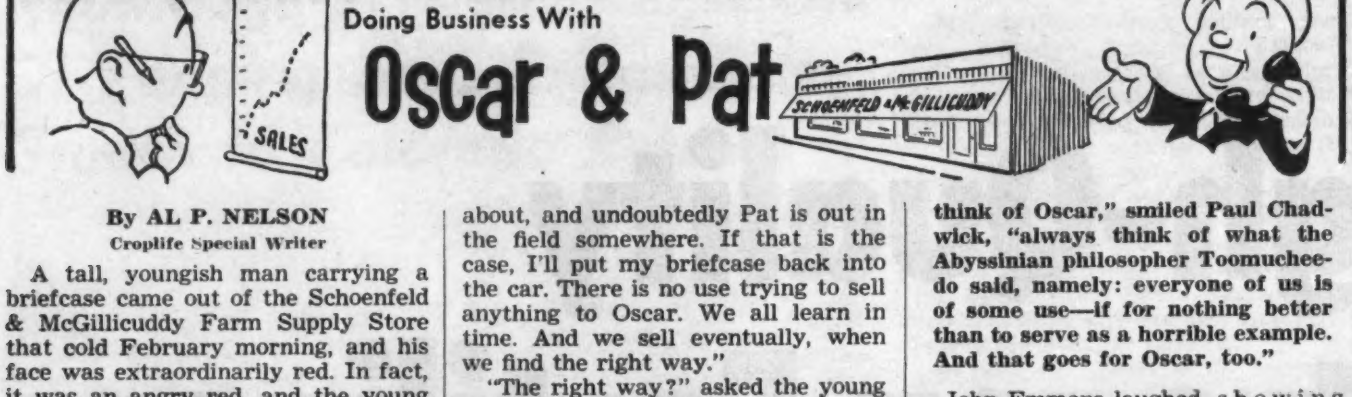
A young man who had just received his degree from college rushed out and said, "Here I am, world; I have my A.B."

The world replied: "Sit down, son, and I'll teach you the rest of the alphabet."



WORST DROUTH—Severity of the drouth in the western and southwestern area of the U.S. is illustrated by this map, released by the government following the recent drouth inspection tour by President Eisenhower. The map shows the number of months during the past four years in which rainfall was below normal. The dark areas had more than 40 months of below-normal rainfall during that period, the dark shaded area 35 to 40 months and the light shaded 30 to 35 months. According to the U.S. Weather Bureau the severity of the present drouth has, in general, equalled or exceeded that of any other drouth in the same area since the beginning of precipitation records about 1850. Tree-ring data suggest that there have been no worse drouths in the area since 1670, and perhaps since 1570.





Doing Business With

Oscar & Pat

By AL P. NELSON
Croplife Special Writer

A tall, youngish man carrying a briefcase came out of the Schoenfeld & McGillicuddy Farm Supply Store that cold February morning, and his face was extraordinarily red. In fact, it was an angry red, and the young man's pace as he headed for his new automobile was that of a man greatly agitated.

At this precise moment, another man got out of a dirty looking coupe of perhaps five years' vintage, and he also carried a brief case. He was an older man than the first, perhaps over thirty-five, and he looked quizzically at the young man just getting ready to get into his flashy new car.

"Excuse me," the older man said to the younger. "Are you a salesman?"

The young man choked. "I—I thought I was!" he snapped. "Until I met that guy in there. Why he won't even listen to a salesman. He won't even be courteous. And the insults he throws at you. Why, If he was my age, I would just sock him a couple. No man can talk to me like that."

The older salesman smiled. "Evidently it is Oscar you are talking about, and undoubtedly Pat is out in the field somewhere. If that is the case, I'll put my briefcase back into the car. There is no use trying to sell anything to Oscar. We all learn in time. And we sell eventually, when we find the right way."

"The right way?" asked the young salesman. "Is there a right way with this firm?"

"There is!" smiled the older man, looking at the lettering on the side of the flashy new automobile. "I see your firm isn't competing with mine, and so if you'll go to the hotel with me and have a sandwich and a cup of coffee, I'll explain."

The young salesman hesitated. "Thanks, I might as well," he replied finally. "I hate to give up on a deal like this. I can always learn. My name's Emmons, John Emmons."

"And mine's Chadwick, Paul Chadwick," said the older man.

So they drove to the little hotel and had a light lunch in the roomy, high ceilinged dining room, which somehow seemed to quiet the younger salesman's nerves a little.

Chadwick filled in the younger Emmons on Oscar and Pat, especially Oscar. He stressed his penurious habits, his insulting ways and his discounting of bills. "When you think of Oscar," smiled Paul Chadwick, "always think of what the Abyssinian philosopher Toomucheedo said, namely: everyone of us is of some use—if for nothing better than to serve as a horrible example. And that goes for Oscar, too."

John Emmons laughed, showing even white teeth. "Say, I never thought of it that way, but you are right. I'm glad I met you. I can see Oscar in a different light now."

"I learned the hard way," Chadwick said. "Oscar threw me out on my ear, so to speak, when I made the mistake of trying to sell him, instead of Pat. Pat is the guy you've got to see, but you mustn't forget the impression you make on Oscar either."

Emmons looked puzzled. "What do you mean?"

"Well," said Chadwick. "You have to string along with Oscar, make him think you think somewhat like him. Then when you sell Pat and the order comes through, you'll find Oscar won't kick too much about it."

"Oh, is that the way it's worked?" said the young salesman. "This certainly is a queer situation."

"It is, believe me!" Chadwick grinned. "Now take a look at my old dirty coupe. It's not mine. My new model car is over at Cedarville six miles away at another dealer's. I use one of his old coupes when I come over to sell Pat. I won't try to sell Oscar. I know Oscar. But Oscar is looking me over all the time I'm here to see what extravagances I've gone in for. If he sees any, he'll buck the order for all he's worth. He'll say we are making too much money on what we sell them, else why can the salesman afford to splash so much."

John Emmons whistled. "So that's the way it goes. Gosh, I made a mistake right off the bat, didn't I, when I came up in a new car? I should have left mine at another dealer's and borrowed an old one—for this one call."

Paul Chadwick grinned. "You're learning. You'll come along all right. And did you notice this old suit I wear, and this faded pink shirt I got after my son quit college? And this worn knit tie? I wear this deal every time I come here where Oscar can see me. It makes an impression on him. I always change to more flashy stuff at the hotel after I get my order."

John Emmons sighed. "Maybe I'd better go back and take another selling course. I never dreamed there would be situations like this. Why, a salesman has to be a regular psychologist to get along with some customers."

Chadwick nodded. "Now here is what we will do. We will telephone to Nora McGillicuddy, Pat's wife, and tell her we are at the hotel, and will Pat phone us when he gets back and meet us at the hotel. Then, we can get a chance to sell him. He's a real merchandiser."

"Say, does that mean we have to hang around all day?" asked Emmons.

Chadwick shook his head. "No, Pat always phones his wife before he goes to lunch downtown. He'll come and see us between 1 and 2. We can finish up by 3 and be on our way. Or, maybe you'd like to skip this account and go on to the next town."

The younger salesman's jaw set stubbornly. "No, I'm going to stick it out this time. That Oscar makes me mad. And I want to meet Pat. I want to see for myself what kind of a man he is who can stand being in partnership with that overstuffed liverwurst."

OREGON MEETING

(Continued from page 9)

Washington County extension agent. In 1956, the plant food association made $1,000 worth of lime and fertilizer available to the farm's owner, Lennox Blatchford of Hillsboro. Over half of this was spent on a liming program on the 80 acre dairy farm.

Mr. Torvend said the purpose of the farm is to show farmers how much money can be made through a good fertilizer program. From the $1,000 invested in fertilizer, Mr. Blatchford reported a net return of $1,345. Greatly improved wheat yields, lots of grass silage, and 2,447 more cow days of pasture than in 1955 were leaders in this success.

The demonstration farm will be maintained two more years, Mr. Torvend said, with the county supplying the fertilizer next year and Mr. Blatchford responsible for fertilizer costs the third year. With new fertilizer materials and new ways of using these products being constantly developed, Mr. Torvend felt there would always be a place for this kind of demonstration in the future.

Another speaker at the meeting, F. T. Tremblay of the Washington Cooperative Farmers Assn., Seattle, explained how fertilizer costs are influenced by the materials and industrial processes used in their manufacture. He also stressed the need for highly water-soluble phosphate fertilizers for vegetable crop production, showing slides comparing yields from 80% soluble phosphate and other products.

Oregon banks should be able to supply local farmers with the loans they may need to buy fertilizers and other agricultural chemicals in 1957, reported Chet Lowe of the First National Bank, Salem.

Banks now recognize these items as "musts" in a farmer's production program if he is to be successful in today's highly technical agriculture, Mr. Lowe said. He added that this means bankers will make money available to farmers who are good credit risks, even in this period of "tight" money.

"Bankers feel that as a farmer improves his yields he improves his credit rating," Mr. Lowe said. He indicated that during recent years production loans on chemicals have climbed steadily and that the 1956 farmer used better than double the production credit requested in 1947.

Mr. Lowe also told the group that banks are inclined to give applications for agricultural chemical loans first choice as a result of their past experience. He also complimented members of the fertilizer industry for doing a good job educating bankers on the need for such loans.

American Potash Opens Laboratory Addition

LOS ANGELES—A $200,000 addition to American Potash & Chemical Corp.'s Whittier, Cal. research laboratory was opened recently. The new addition, which doubles previous workroom space, consists of three four-man labs, two three-man labs, a small lab for micro-analytical work, two large labs for process development and other rooms for allied uses.

With less than 30 employees in 1953, the lab now has a staff of 65 under the direction of Dr. William Emerson.

Approximately 100 persons attended opening ceremonies for the new addition. Guests were taken on a guided tour of the facility by lab personnel who described various projects currently under way.

Joseph C. Schumacher, AP&CC vice president in charge of research, who acted as host for the affair, introduced Peter Colefax, company president, as main speaker.

FARM SERVICE DATA

Extension Station Reports

Ranchers should apply fertilizers to their best rangelands for the highest return per dollar spent. Too often ranchers put fertilizer on thin soils or rock ground and then are disappointed because forage production is not increased substantially, reports a University of California range researcher.

Rangelands that respond best to fertilizers are abandoned grain fields, range pastures with soil several feet deep and not too heavily wooded, or pastures where livestock can feed during the critical winter period, according to Alfred H. Murphy, superintendent of the University's Hopland Field Station in Mendocino County.

Studies at this range research station show that the costs of fertilizer applications vary considerably with the method used. And the method is limited by the terrain, accessibility, soil condition and time of application.

In tests of both ground and air rigs on the Hopland research range, Mr. Murphy found that more areas were missed with ground rigs. Also, rough ground was hard on the equipment, which is designed for cultivated ground.

On rough terrain, particularly larger acreages, airplane applications also proved more economical, said Mr. Murphy. Prices can vary from one to four cents per pound of fertilizer applied, depending on the distance from the air strip to the range area being fertilized.

A plane generally carries between 1,000 and 1,400 lb. of material per flight and will spread a strip from 25 to 50 feet wide, depending on flying altitude. The lower the plane can fly, the less the opportunity for wind to blow the fertilizer away from the area to be treated, said Mr. Murphy. However, pelleted fertilizers are less blown away by wind than powdery types, he added.

Another cost-cutting possibility is to use as high an analysis of fertilizer as is available, since flying costs are figured on a per pound basis. The irregular topography and scattered trees on the land often cut down the pilot's visibility. Pre-fertilizer planning will help ranchers get more complete coverage of their rangelands at the lowest costs, Mr. Murphy said.

★

J. D. Gilpatrick, plant pathologist with the Agricultural Experiment Station at New Mexico A&M College, points out that ethylene dibromide (EDB) has been used for several years in Dona Ana and Luna counties for the control of cotton nematodes.

On four farms chosen for experimental work in the 1956 season, a treatment of two gallons of EDB per acre in-the-row, increased yields by 23 to over 100%. The net return was $48 to $107 per acre after paying for the treatment, which cost $14 including application.

It is estimated that EDB will be used on about 2,000 acres of cotton in Dona Ana and Luna counties in 1957. Mr. Gilpatrick says two other materials, DD and Nemagon, have given excellent control of cotton nematodes in other states and will be tested in New Mexico this year.

★

Prospects that chemical warfare may stem damage by Oregon's number one pest of vegetable and small fruit crops are reported by Oregon State college scientists following three-year tests to control root-nibbling symphylids.

The small, centipede-like creatures —an increasing menace to both commercial growers and home gardeners —feed on plant roots and root vegetables, often causing complete crop loss. Growers have reported some fields so heavily populated with symphylids that even weeds fail to sprout.

Soil treatments with parathion insecticide and fumigants show promise for growers of high-value crops in scattered Willamette Valley trials reported by H. E. Morrison, Oregon State College entomologist, and Milton Savos, research assistant.

Fumigation with ethylene dibromide and two new materials, Vapam and Nemagon, maintained satisfactory symphylid control lasting throughout the three-year period. Although treatment is about $60 an acre, Mr. Morrison believes benefits will extend beyond three years.

Parathion treatment is $20 to $25 an acre, and the scientists say it gives protection for three months or less, probably enough time for most crops to establish a good root system and produce normal yields.

Best results with soil fumigants come with mid-July through August applications when soil temperatures are above 70° and symphylids are normally in the upper soil. The fumigant should be applied seven to eight inches deep in a smooth, firm seedbed.

★

A promising new insecticide for killing heel-fly grubs before they bore holes in an animal's hide is now in the last experimental stages, says Ted Robb, University of Wyoming extension entomologist.

Mr. Robb and Gene DeFoliart, experiment station entomologist, report that if the insecticide called Dow ET-57 definitely proves as successful as it now seems to be, it will end a long-time search for an internal insecticide to destroy the costly pest.

The U.S. Department of Agriculture, the Dow Chemical Co. and several state experiment stations including Wyoming are cooperating in ET-57 research.

In tests so far, a single dose, fed just after the heel-fly season, destroyed both northern and common species of grubs before they broke through the hide on the animal's back. A single dose given by mouth killed 92 to 100% of all the grubs within a few days, Mr. Robb said.

ET-57 probably will not be available commercially for some time, he said. It will take at least another year of research to learn how the insecticide affects treated animals and if it will leave dangerous residues in meat and dairy products. Scientists working with ET-57 do not expect long-lasting residues to appear in meat, but are investigating the time limit which should pass between treatment and slaughter.

★

New research on the potato leafroll disease, studies on the role of insects in the spread of this and other potato diseases in Idaho and expansion of foundation seed production have been made possible by two grants to the University of Idaho agricultural experiment station by the Idaho Potato Producers Assn. The grants total $18,000.

Under a $12,000 grant for potato disease studies, a full-time entomologist will be employed at the Aberdeen branch station. There he will work with Dr. J. D. Guthrie, plant pathologist, on leafroll and other potato diseases. The producer association grant will finance this new study during the coming two years.

★

The addition of 100 lb. of nitrogen per acre increased the yield of barley by 126% in one instance and by 154% in another, in experiments recently reported by the University of Nevada. The tests were made on soils ranging from poor to good.

The addition of 50 lb. of nitrogen increased the yield of oat hay by 24% and its protein content was increased from 4.63% to 5.16%. By adding phosphate fertilizer, the phosphorus content of the oat hay was increased to 0.23% and also resulted in some increase in yield over the use of nitrogen alone.

★

Fertilizer and grain make a profitable combination, according to the California Fertilizer Assn., referring to the 1956 annual report of the Orange County Agricultural Extension Service of the University of California.

The service reports that barley yields on a 270 acre field averaged five 100 lb. sacks more per acre where fertilized than on a comparable acreage which was not fertilized. The cooperating barley farmer reported a net increased return of $8 per acre due to the use of fertilizers.

In the same report, the Orange County Agricultural Extension Service said that in six fertilizer trials during 1956, "applications of nitrogen and phosphorus increased the yield of native forage grasses. The largest increase was where nitrogen and phosphorus were used together. When used singly, nitrogen gave the largest increase in forage yield."

★

Dr. Alvin Hamson, Utah State Agricultural College, told the recent annual canning crops short course in Ogden that soluble starter fertilizer, applied in the planting water, helps establish tomato plants and boost yield. The starter is in addition to regular recommended fertilizer applications of approximately 600 lb. of treble superphosphate per acre.

Dr. J. L. Haddock, USDA collaborator at Logan, said pea growers should maintain a high level of phosphorus by applying 100 lb. of superphosphate per acre every year or about five times that amount every five years.

★

Range management demonstrations conducted last year under the supervision of Texas county agents involved 3,469,105 acres of Texas rangelands, report A. H. Walker and G. O. Hoffman, Texas A&M extension range specialists.

The specialists, in their year end report, further stated that 7,751 range operators conducted demonstrations which stressed the efficiency and economy of production under drouth conditions. These demonstrations, because of the improved practices used, increased the returns or savings to the ranchmen by approximately four and a quarter million dollars.

TRADE WINDS

News That Charts Selling Opportunities for Dealers

Pacific Northwest Plant Food Assn. May Set Up Soil Sampling Project

PORTLAND, ORE. — Washington farmers may participate in a statewide soil testing project beginning July 31, 1957 if a tentative program outlined by Leon S. Jackson, Pacific Northwest Plant Food Assn. executive secretary, meets with the association's full approval. Board of directors member, Frank Taylor of the soil improvement committee, has prepared the unique program.

The plan is to encourage fertilizer dealers to collect soil samples from local farmers. The dealers would be paid $1 for each sample submitted to the state soil testing service for analysis of NPK, Ca, pH plus recommendations. This service fee, paid by the association, would be limited to 1,000 samples on an allocated basis in Skagit, King, Clark, Kittitas and Grant counties.

Under the program, farmers would pay for their own analyses, a $1 plus postage fee, to the soil testing laboratory.

Plant food dealers, to be eligible for the program, would be required to attend a meeting with their county agents. Dealers would be instructed how to take an adequate soil sample and hear the entire program outlined.

Association plans point to the fall application season for the program. Direct cost to the association would be $1,000; the expense of dealer payments. The program assumes that Pacific Coast Borax Co. and American Potash and Chemical Co. will provide additional aid.

Mr. Taylor, in his program presentation, outlined reasons for his suggested plan. They include:

1. Correction of current serious abuses of soil testing programs in several Washington counties which work to the detriment of the farmer, industry and state soil testing service.

2. Added impetus to the State College of Washington testing program especially in the fall months when there is a usual lag.

3. Farmer aid in obtaining economical crop increases.

4. Acquaint the dealers with the college testing program and assist them in selling proper amounts and types of fertilizer to farmers.

5. County tests, averaging 200 per county, would be invaluable to members of the industry in developing a nitrogen, phosphate, calcium and boron program for neglected forage, grain and field crops.

6. Promote the use of fall fertilizer.

7. The program would be completed and its effects promptly felt.

8. The program would be a public service to the state college and would demand the county agent's interest in fertilizers. It would acquaint the agent with the association and its member industries.

9. The program would have local news appeal.

10. The program, costing $1,000, would automatically have a matching amount from the farmers and encourage their support.

Another advantage outlined by Mr. Taylor is that the program is paying for collection of only 1,000 samples but it is expected that farmers will submit additional samples at their expense with a total of 5,000 samples possible.

County agent meetings, to take place in the agent's office, will be open only to dealers, soil improvement committeemen, testing service personnel, association members and department of agriculture employees. No farmers will be permitted at the meetings.

A letter to be sent from the secretary of the association to voting members will advise them of the program, place responsibility on members to bring dealers to the county meetings and request their immediate answer on prospects in their area.

County dealers will also receive a letter from the secretary advising them of the time and place of meetings and encouraging their attendance. Material provided by the college testing service will be available to persons attending the county meetings.

SEEDLING DISEASE

COLLEGE STATION, TEXAS — Seedling disease cost Texas growers an estimated 426,000 bales of cotton during the past five years, says a report from the Cotton Disease Council.

Series of Fertilizer Meetings Planned For Idaho Dealers

PORTLAND, ORE. — Idaho fertilizer dealers will have an opportunity to meet with soils specialists at six meetings planned for that state beginning Feb. 27, according to Leon S. Jackson, Pacific Northwest Plant Food Assn. executive secretary.

Beginning with a meeting in Coeur d'Alene, the flying squad of experts will be in Lewiston Feb. 28, Caldwell on March 5, Twin Falls on March 6, Pocatello on March 7 and end with a Rexburg meeting March 8. All meetings will begin at 9 a.m. and end at 4 p.m.

Speakers and their topics expected for the Idaho tour will include:

"Minor Elements, Their Relation to Fertility in Idaho," by Roger Harder or G. O. Baker, University of Idaho.

"Fertilizer Materials," by representatives of the industry.

"Factors to Consider in Determining Fertilizer Rates," by Mr. Harder or Mr. Baker.

"State Fertilizer Law, Changes, Analysis, Registration and Fees" by Robert Reichert, director of plant industry, Oregon Department of Agriculture.

"How Fertilizer Dealers Can Use the Soil Testing Services Available in Idaho for Determining Kind and Rate of Fertilizer Application," by Charles G. Painter, extension service, University of Idaho.

"Ethics in Fertilizer Selling," by industry representative.

"Dryland Fertilization in Idaho," by John Siddoway, project supervisor, Agricultural Research Service.

"Factors to Consider in Building Up Bean Production," by Dr. Marshall J. LeBaron, superintendent, branch experiment station, Twin Falls, Ore.

Colorado Facing Heavy Grasshopper Outbreak

DENVER — Surveys by state and federal entomologists show that about 1,633,000 acres in Colorado, most of them on the eastern plains, are infested with grasshoppers. Of the total, 1,195,000 acres are in rangeland. A measure to provide $150,000 as the state's share in cost of a 1957 control program is before the Colorado legislature.

COLORADO VEGETABLE OUTPUT

DENVER—The combined production of all vegetables in Colorado during 1956 totaled 288,200 tons, compared with 240,000 tons in 1955, according to the U.S. Department of Agriculture.

Fertilizer, Pest Control Credited for Big Yield Boosts

SACRAMENTO — Increased fertilization and better control of pests and diseases are among factors believed responsible for spectacular per acre yields of crops in 1956, according to N. I. Nielsen, chief of the California Crop and Livestock Reporting Service.

Mr. Nielsen's report to the California Board of Agriculture showed such increased yields as:

Sugar beets, 9.1 tons per acre average during the 1920's; 13.4 tons during the 1930's and 18.4 tons from 1943 to 1954.

Cling peaches, 4.1 tons, 7.2 tons and 11.7 tons per acre for the same periods.

Canning tomatoes, 4.1 tons, 5.3 tons and 11.1 tons per acre during the same periods.

Cotton, 303 lb., 583 lb. and 659 lb. per acre for the same periods.

These crops produced spectacularly high yields during 1956. Sugar beets averaged 20.5 tons; cling peaches, 14 tons; tomatoes, 18.4 tons; and cotton, 897 lb.

Last year California farmlands produced nearly 30,000,000 tons of grain, vegetables, fruits and nuts valued at a record breaking $1,844,661,000, Mr. Nielsen said.

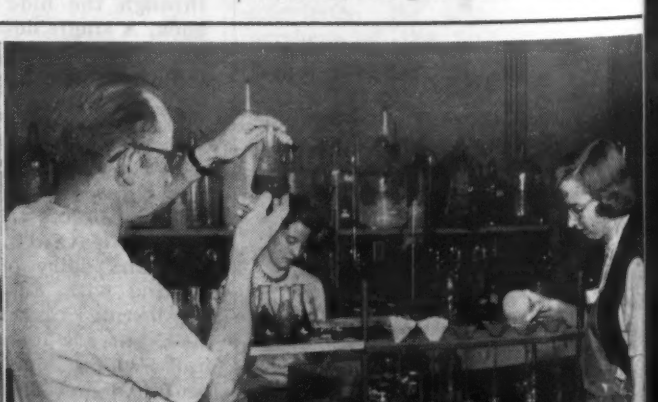
Total crop production for 1956 was 3% above the previous record total of 28,959,800 tons in 1955. Total value was 9% above the 1955 total and 4% above the 1951 record.

Feed Meeting to Include Fertilizer Session

PORTLAND, ORE.—For the first time in history, the Oregon Feed and Seed Dealers Assn. annual convention will devote a full half day session to the fertilizer industry. Tom Sullivan, Continental Grain Co., Portland, general convention chairman, announced the move recently and named Alec Runciman, Webfoot Fertilizer Co., Portland, to head the fertilizer part of the convention program.

Slated for March 14-15 in Portland's Multnomah Hotel, the convention will open with the fertilizer program at 9:30 a.m. March 14.

Named to aid Mr. Runciman in preparing a program will be speakers Karl Baur, Pacific Supply Cooperative, Portland; J. D. Patterson, Salem, newly elected president of the Association of American Fertilizer Control Officials, and T. L. Jackson, Oregon State College.



UTAH SOIL TESTING PROGRAM—Utah State Agricultural College, the Utah Bankers Assn. and the National Plant Food Institute jointly are sponsoring a program to promote increased use of soil tests by Utah farmers as a "tool" for increasing efficiency in agriculture. The institute is bearing part of the cost of the soil testing program, which includes supplying two soil sampling tubes, free, to any interested bankers in Utah. Bankers, in turn, lend the tubes to their farmer-borrowers. Another phase of the joint program, includes the distribution of instructional leaflets and soil cartons by the college to the banks, free of charge. Any Utah bank desiring soil sampling tubes, soil cartons, soil sample instructions, etc., may obtain them by writing direct to J. P. Thorne, Utah State Agricultural College, Logan, Utah. The program is illustrated in the photos above. In the left picture Coe Larkin, left, a Smithfield, Utah farmer, receives a soil sampling tube and materials for collecting soil samples from Fred Thompson, assistant cashier of the Cache Valley Bank. In the center picture, Paul Christensen, Utah State Agricultural College extension soil specialist, is placing soil in the sample bag held by Mr. Larkin, while sample form is completed by James Thorne, in charge of the Utah Soil Testing Laboratory. Mr. Thompson looks on. At right, samples are being tested in the Utah Soil Testing Laboratory for available phosphorus. In the foreground, one of the flasks is being observed by James P. Thorne, soil scientist, Utah State Agricultural College, while Marilyn Thompson filters other samples. In the background, Joan Phippen is pipetting samples for phosphorus analysis. After the tests are made, the results will be sent to farmers to enable them to purchase their fertilizers in the quantities and grades most desired for efficient and economical production of crops.

Woodbury Buys Trancucci Chemical Property in Denver

ST. JOSEPH, MO. — Woodbury emical Co. here recently purchased buildings and property of the ancucci Chemical Co., Denver, and ll take over active operation of property in March, according to rb Woodbury, president.

The move is another in the recent pansion of Woodbury. About a year the firm obtained the Export emical Co. of Colorado, and last mmer purchased the Geigy Co.'s st plant in McGregor, Texas. This nt is being installed in Denver d will be in production this spring onard Everett, formerly of Woodry's St. Joseph plant, is in charge the entire Denver operation.

Woodbury also has a new branch fice in Coral Gables, Fla., where chard Hutchings, formerly office anager in St. Joseph, is in charge.

The firm, which manufactures agriltural chemicals, recently branched to industrial chemicals.

The rapid expansion has resulted management changes at the home fice, where Ross Woodbury has en placed in charge.

Martin L. Hassel, formerly with lvay Division, Allied Chemical & ve Corp., has been placed in charge the Special Products Division of oodbury, and Frank Gibbins has en advanced to general manager production in the Special Prodts Division. Mr. Hassel has been ected a vice president.

Newcomer to the Woodbury sales mily is Edward (Bud) Phillips who ll cover Iowa and Illinois. He will e a company plane to service this rritory. Mr. Phillips is a U.S. Army serve pilot and holds a helicopter structor rating.

Ray Lemmon, formerly with Chipan Chemical Co., has joined the oodbury sales staff and will cover rthern Nebraska, South Dakota d southern Minnesota.

California Amends Regulation on Use of High Volatile Herbicides

SACRAMENTO — The California epartment of Agriculture has nended its regulations to permit e of highly volatile formulations 2,4-D for control of weeds in the ontpellier area of Stanislaus and erced counties.

The change came as a result of public hearing at which grain owers and agricultural pest conol operators testified that the low latile formulations which could be ed under the previous regulations d not provide satisfactory or ecomical control of weeds.

Testimony also established that w susceptible crops were grown in e Montpellier area and they were t in a susceptible stage when the ed killer would be used.

Allen B. Lemmon, chief of the partment's Division of Plant Instry, in announcing amendment of e regulations to permit use of the ghly volatile forms of 2,4-D, said at grape growers in the Lodi area d submitted a petition to extend e boundary of the hazardous area st of Lodi to the Sacramento ver. Use of 2,4-D in the hazardous ea is restricted to protect the kay vineyards. A hearing will be ld soon on a petition.

SOILS SPECIALIST NAMED

NEW BRUNSWICK, N.J.—Robert Hanna has been appointed to the tension Service staff at the College Agriculture, Rutgers University, assistant extension specialist in ils. He formerly was a soils scitist at the Connecticut Experiment ation.

BOLL WEEVIL

(Continued from page 1)

in the fall of 1955 but comparable to those in the other states.

In Louisiana, 1,344 weevils were found per acre of trash, only about one-seventh the 1955 count. Highest counts in this state were in the northeast — where numbers were slightly under the 20-year average—and in the north-central area.

Mississippi recorded 2,091 weevils per acre of ground trash, less than half the number found in the fall of 1955. Delta areas of this state sheltered the most weevils.

Parts of South Carolina, North Carolina and Virginia were combined into five areas for the fall boll-weevil survey. The Coastal Plains section of South Carolina and North Carolina had an average of 8,635 weevils per acre in the areas sampled. In one key county in this area, South Carolina's Florence County, 1956 fall counts were 5,757 per acre, a little more than half the 1955 count, but still among the higher annual records of the past 18 years.

The Piedmont section of North and South Carolina averaged 6,268 weevils per acre last fall and north-central North Carolina 4,815.

South-central South Carolina averaged 3,712 live weevils per acre last fall.

Southwestern Arkansas' average was 989 weevils per acre, with counts in Hempstead County down to 1,398 per acre from the 1955 count of 1,717.

Southeastern Virginia's 1956 count was 4,169 weevils per acre. The state's 1955 average was 1,476.

Tennessee's McNairy County survey turned up 933 live weevils per acre, a slight rise above the previous year's 902.

Georgia's count of 1,936 more than doubled the 1955 state average and topped the 1,169 average for the six years that records have been taken. Highest counts were in the northwestern and north-central areas of this state.

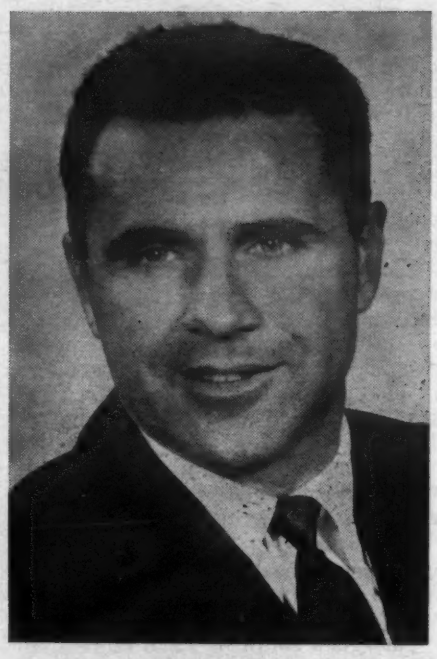
Soil Bank Payments

WASHINGTON — Payments to farmers participating in the 1956 Acreage Reserve program of the Soil Bank totaled $242,524,096.91 in 45 States and Puerto Rico reporting through Dec. 31, 1956, the U.S. Department of Agriculture has announced.

CSC DIRECTOR

Commercial Solvents Corp. has elected Monroe C. Gutman as a director, it was announced by J. Albert Woods, president. Mr. Gutman is a partner in Lehman Brothers, investment bankers, and chairman of the executive committee of the Lehman Corp., an investment company.

R. H. McGough



Robert G. Hickle

Brea Names New Sales Managers; to Expand Dealer Service

LOS ANGELES — Brea Chemicals, Inc., subsidiary of Union Oil Company of California, has appointed a new assistant manager of agricultural chemical sales. The company reorganized its marketing area, increasing its sales districts from five to eight, it was announced by R. H. McGough, manager of agricultural chemical sales.

Robert G. Hickle, formerly Brea central California district sales manager, has taken over immediate responsibilities as assistant manager of the agricultural chemical sales organization. Sales districts in the Pacific Northwest, Sacramento Valley and San Joaquin Valley were each divided into two districts to further concentrate the company's service activities in those areas.

Scott C. Hanson is new district sales manager for the Pacific Northwest irrigated area, with headquarters in Washington's Yakima Valley. Lester W. Orton, sales manager for the Pacific Northwest dry land grain area, will headquarter at Milton-Freewater, Ore.

Six district sales managers have been named for California. They include John E. Wise, northern Sacramento Valley, Sacramento; Richard Hartman, southern Sacramento Valley area, Stockton; Robert P. Baldwin, northern Jan Joaquin Valley, Fresno; Richard O. Schade, southern San Joaquin Valley, Visalia; Thomas M. Boland, southern California coastal area, Santa Ana, and Olan R. Genn, southern California desert area, Brawley.

In announcing Brea's sales and service expansion plans, Mr. McGough said the new program is aimed at providing greater personal service to growers and fertilizer dealers in each of the Pacific Coast's important agricultural areas.

"Fertilizer, properly used, is the best buy a farmer can make," he said. "In general, no other investment can pay him such big dividends. For this reason, fertilizer dealers and producers play an increasingly important role as sources of fertilizer information."

California School Gets Industry Grants

SAN FRANCISCO—A grant of $7,000 by the Citrus Industry Research Assn. to the Riverside campus of the University of California has sparked a new research project on fungicide in the citrus industry.

The money, the largest single grant made during the month of November to the division of agricultural sciences of the university for studies in the agricultural chemical field, has been given with the hope of developing means of control of this type of disease.

Another study on experimental insecticides is also beginning on the Riverside campus as the result of a grant of $3,000 by the Carbide and Carbon Chemicals Co. On the Davis campus the Imperial County Board of Supervisors has voted a $2,000 grant for an alfalfa breeding program, although part of the site of the study will be at the Valley Field Station in Imperial County itself.

Five hundred dollars was given during November by the Food Machinery and Chemical Corp. for research on scale insects on stone fruit, and the Chipman Chemical Co., Inc., gave ten pounds of carbagran 10 for experiments to control weeds in strawberries and lettuce.

Expanded Fruit, Nut Research Program Asked

WASHINGTON—A balanced and expanded program of research on fruits and nuts was called for by the Deciduous Fruit and Tree Nuts Research and Marketing Advisory Committee to the U.S. Department of Agriculture at its annual meeting in Washington, D. C., in January.

Among lines of work given priority in production research were:

Increase work on the effects of pesticide residues on fruits, nuts and soils. Expand studies of nematodes as a limiting factor in fruit production, with emphasis on improvement of control methods. Widen research on biological control of fruit insects in vineyards, orchards and plantings of small fruits.

Industry Patents and Trademarks

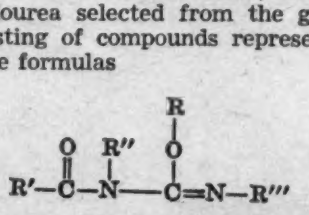
2,778,860

Preparation of Hexachlorobenzene. Patent issued Jan. 22, 1957, to George McCoy, Philadelphia and Charles E. Inman, Roslyn, Pa., assignors to the Pennsylvania Salt Manufacturing Co., Philadelphia. The method of preparing hexachlorobenzene comprising heating material of the group comprising benzene and chlorobenzenes of less than 6 atoms of combined chlorine in the presence of activated carbon at a temperature of 230 to 500° C. together with an excess of chlorine to the stoichiometric quantity necessary to convert the materials of said group to hexachlorobenzene.

The process of making hexachlorobenzene comprising preparing a slurry of benzene hexachloride and material selected from the group consisting of benzene and chlorobenzenes, passing a portion of said slurry into a first reactor containing activated carbon while maintaining said first reactor at a temperature of not less than 190° C. to decompose the benzene hexachloride into trichlorobenzene and HCl, passing a second portion of said fluid mixture, together with chlorine in excess to the stoichiometric amount necessary to convert said slurry to hexachlorobenzene, into a second reactor containing activated carbon while maintaining said second reactor at a temperature of not less than 230° C. to form hexachlorobenzene, cooling the exit vapors which consist essentially of hexachlorobenzene, HCl and chlorine from said second reactor to condense out said hexachlorobenzene and passing the HCl formed therein together with the unreacted chlorine into said first reactor together with fresh charges of benzene hexachloride.

2,779,669

Acyl Pseudourea Herbicidal Composition and a Method for Killing Weeds Therewith. Patent issued Jan. 29, 1957, to Jack A. Snyder, Wilmington, Del., assignor to E. I. du Pont de Nemours & Co., Inc., Wilmington. A method for the control of weeds which comprises applying to a locus to be protected, in amount sufficient to exert a herbicidal action, an acyl pseudourea selected from the group consisting of compounds represented by the formulas



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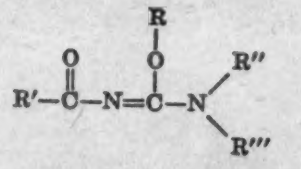
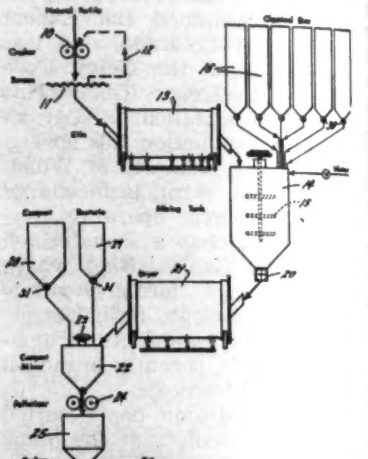


where R is from the group consisting of substituted and unsubstituted alkyl and alkenyl organic radicals of 1 to 4 carbons, R′ is from the group consisting of phenyl and substituted phenyl radicals, and R″ and R‴ are from the group consisting of hydrogen and substituted and unsubstituted alkyl and alkenyl organic radifals of 1 to 6 carbons.

2,779,670

Soil Conditioning and Fertilizing Compounds and Methods of Manufacture. Patent issued Jan. 29, to Albert Le Roy Burkett, Pueblo, Col., assignor to Combined Minerals, Inc., Denver, Col. A method of manufacturing a soil conditioning compound comprising: expanding perlite under the influence of heat; discharging the expanded perlite into an aqueous solution; adding inorganic salts containing nitrogen, potash, and phosphate to said solution; agitating the solution; discharging the solids from said solution to a dryer; drying the solids sufficiently to cause the salts of the solution to precipitate upon and to adhere to the surfaces and in the interstices of the perlite particles; discharging the perlite with the adhering dried salts to a mixer; adding organic soil conditioning ingredients to said mixer; mixing the perlite with the adhering dried salts with the organic



ingredients; thence discharging the perlite with the intermixed organic material and adhering dried salts as a soil conditioning compound.

2,779,680

Fumigation With Fluorocyclobutenes. Patent issued Jan. 29, to Mark A. Wolf, Midland, Mich., assignor to the Dow Chemical Co., Midland. A method for controlling insects, bacteria, nematodes and fungi which includes the step of exposing matter infested with these organisms to a lethal concentration of the vapors of a member of the group consisting of hexafluorocyclobutene, 1-chloro-2,3,3,4,4-pentafluorocyclobutene, and 1,2-dichloro-3,3,4,4-tetrafluorocyclobutene.

2,779,703

Fungicidal Mercury Tertiary Butyl Mercaptide Compositions and Method of Applying the Same. Patent issued Jan. 29, 1957, to Willie W. Crouch and Lyle D. Goodhue, Bartlesville, Okla., assignors to Phillips Petroleum Co. A fungicidal composition which is substantially non-toxic to the fungi situs comprising from 0.1 to 10,000 parts per million of mercury tertiary butyl mercaptide dispersed in a fluid fungicidal adjuvant as a carrier therefor.

Industry Trade Marks

The following trade marks were published in the Official Gazette of the U.S. Patent Office in compliance with section 12 (a) of the Trademark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. (See Rules 20.1 to 20.5.) As provided by Section 31 of the act, a fee of $25 must accompany each notice of opposition.

Malcap, in capital letters on solid background, for insecticide and fungicide. Filed May 16, 1955, by The Parrott Chemical Co., Stamford, Conn. First use Feb. 25, 1955. (Published in Official Gazette, Jan. 29, 1957)

Naco, in capital letters, for fertilizers and fertilizer materials. Filed Jan. 19, 1956, by W. R. Grace & Co., New York. First use Oct. 3, 1950. (Published in Official Gazette Jan. 29, 1957)

Bioloam, in capital letters, for organic fertilizer. Filed Jan. 25, 1956 by Reliance Chemicals Corp., Houston, Texas. First use Jan. 12, 1956. (Published in Official Gazette Jan. 29, 1957)

LIQUID FERTILIZER

PENDLETON, ORE. — Pendleton Grain Growers have announced they now are selling a new liquid nitrogen fertilizer to members and other interested persons. Called Uran, the fertilizer can be sprayed by either airplanes or ground equipment.

CALIFORNIA WEED CONFERENCE

(Continued from page 6)

he plants should be sprayed as on as the leaves are fully expand- . Repeat applications will prob- ly be necessary the following ar, he said.

William L. Hopkins, University of lifornia farm adviser in Fresno nty, told of successful control of tails and tules, aquatic weed pests h two chemicals, amino triazole dalapon.

One application of amino triazole ween the time the cattails bloom, mid- to late-summer, and the first st can kill more than 95% of the eds, Mr. Hopkins said. He recom- nded a ground application of four unds of the chemical per 100 gal- s of water plus six ounces of a cker-spreader. The cattails should fully covered with the spray, he vised.

"Tules are more difficult to con- l," he said. "But we found that o to three applications of amino azole at the same doses used on tails would kill them."

Combinations of amino triazole and lapon look even more promising an either chemical alone, he said, pecially with airplane applications.

Orval A. Vaughan, supervising nt quarantine inspector, bureau of nt quarantine, California Depart- nt of Agriculture, Sacramento, ad- essed the group on the "Intrastate ovement of Weed Seed Infested ed Grain." Agencies of the State partment of Agriculture enforcing ws designed to protect farmers ve recognized the need for a new proach in grain inspection, he said.

Mr. Vaughan pointed out that anpower for inspecting grain at estination, as is now the practice, ould be utilized more advantage- usly in aiding the farmer to con- rol weeds if inspections were made n the farm and at origin rather han rejecting grain at destination. new inspection approach, in his pinion, is also needed to cope with he ever-increasing movement of rain into and within California ch year.

The county agricultural commis- ners, the quarantine official em- asized, have developed a proposal at offers a program providing for ntrol in the field of origin. "Not ly do we approve of this proposal t agricultural officials of other ates do so as well," Mr. Vaughan id.

Kern County's "new approach" to melthorn eradication on irrigated nds was described by C. Seldon orley, Kern agricultural commis- ner, of Bakersfield.

Mr. Morley described camelthorn, deep-rooted perennial weed as such serious pest that state laws require eradication in California.

In reviewing the history of early ntrol in Kern County, he explained at prior to 1952 it, was considered t to eradicate camelthorn, the in- ted areas should not be disturbed farming operations. The general ctice, he said, was either to fence festations occurring in cultivated as and to farm around the isolated ts, while they were being treated, to return infested farm lands to land pastures and to attempt ntrol.

Mr. Morley said that although this s an effective practice, a changing nomic situation called for a new proach to camelthorn eradication, cause of the great demand for ir- ated lands to produce such crops cotton.

Mr. Morley reported that the pres- procedure involves treating estab- ed camelthorn infestations in ir- ated row crops with such chemi- s as carbon bisulphide or sodium enite. He disclosed that the new gram unexpectedly has made camelthorn eradication more simple and satisfactory. Periodic irrigation of the fields provides optimum conditions for the use of chemicals, he said.

In discussing weed control in seed fields, Lloyd E. Arnold, Arnold-Thomas Seed Service, Five Points, Cal., defined a weed as "any plant which is out of place." It was pointed out that one of the great problems of the certified seed producer is the control of volunteer plants of the seed crop being produced which are classed as a weed by that definition.

Chemicals are coming into the picture for the control of weeds or plants which are out of place, Mr. Arnold noted.

Chloro IPC has been effective in the control of dodder, wild oats, and watergrass. Mr. Arnold referred to one instance where a grower had several thousand pounds of alfalfa from the 1955 crop which had to be specially cleaned to remove dodder. By the use of Chloro IPC, the 1956 crop from this same field showed practically no dodder.

Dalapon has been used to control Bermuda grass in production fields of Merion Kentucky bluegrass, and some of the 2,4-D materials are being used to control broadleaf annuals in grass seed production fields. Amino triazole looks good for the control of volunteer alfalfa plants along roads, ditches and edges of fields, Mr. Arnold said.

He stressed the point, that it is less costly to keep weeds under control in the field than to have the seed crop contaminated with weed seed that must be removed in the seed cleaning operation.

The conference will meet in San Jose, Jan. 21-23, 1958; Santa Barbara, Jan. 20-22, 1959; Sacramento in 1960, and Fresno in 1961.

Lee R. Hays Named Texaco Representative

NEW YORK — Appointment of Lee R. Hays to represent the Texas Co. in the Midwest in selling Texaco anhydrous ammonia and nitrogen solutions for agricultural use has been announced by S. C. Bartlett, the company's vice president in charge of sales.

Mr. Hays joined the Texas Co. after 11 years in the field of agriculture, first with the Pennsylvania Railroad and later with the Olin Mathieson Chemical Corp. He is a graduate of the University of Illinois with a B.S. degree in agronomy. He lives at 2004 S. Race St., Urbana, Ill.

As a part of its expansion of petrochemical manufacturing and sales activities, Texaco is presently constructing an ammonia and nitrogen solutions plant at Lockport, Ill., to serve fertilizer manufacturers and ammonia-using industries.

EVALUATION CONFERENCE

(Continued from page 1)

years ago, and explained why these ideas differ somewhat from commonly-accepted beliefs. He also observed that the treatment of rock phosphate with sulfuric acid in order to obtain phosphate fertilizer dates back years earlier than the date commonly accepted. "There is still much to learn about rock phosphate processing," he said.

A. V. Slack, chief of the program development staff, TVA, discussed trends in commercial production of liquid mixed fertilizers. The number of plants making liquid fertilizers has almost doubled the past year, he reported. The growth pattern is that of small plants of 1,000 to 3,000 tons annual production setting up to serve local areas.

Other TVA researchers on the liquid fertilizer panel included J. M. Stinson and M. R. Siegal of the division of chemical development. Mr. Siegal told the soils and plant researchers of a method for using "wet-process" or "green" phosphoric acid to produce satisfactory, low-cost liquid fertilizers. A suspension-type 8-24-0 liquid fertilizer made from wet acid was applied satisfactorily with ordinary pesticide equipment. This was on a TVA test demonstration farm in cooperation with the Kentucky agricultural extension service last year.

Mr. Stinson told the audience about the development and properties of a superphosphoric acid that contains about half again as much phosphate as ordinary phosphoric acid. The new acid is much less corrosive, and when reacted with ammonia, he said, gives a liquid fertilizer of much higher concentration than that produced with commercial acid.

One product of superphosphoric acid was 8-36-0 liquid fertilizer, which compares with the standard 8-24-0. It looks promising for use in making other fertilizers, and probably can be shipped at less cost than other phosphoric acids of lower concentrations, he declared.

In yield tests between liquid and solid or dry TVA fertilizers, the liquids were "equally as good or better" than comparable fertilizers applied as a solid, according to Dr. J. D. DeMent of TVA's division of agricultural relations. He said that dry matter greenhouse yields showed less difference in the case of diammonium phosphate. Placing the fertilizer in bands slightly beneath the soil surface was much more effective than when fertilizer was mixed with the soil, it was pointed out.

Dr. A. J. Ohlrogge, Purdue University agronomist, presented a novel method of measuring phosphorus uptake by plants throughout the early growth period by use of radioactive phosphorus. Dr. Ohlrogge presented data which show that the salts applied in conjunction with concentrated superphosphate influence the uptake of phosphorus during early growth of the plant. He also reported that in many cases this early phosphorus uptake influences the final yield of the crop. Dr. Ohlrogge laid particular stress on the effect of this early phosphorus uptake when the fertilizer was applied to corn in the row.

One session presented discussions on how fertilizer nutrients react with the soil and move into the plant. This type of study is yet another in which soil and plant experts try to improve the efficiency with which fertilizers are used to produce the various kinds of crops. The study of both chemistry and physics is involved.

Among speakers who discussed this fundamental research on soil-plant and fertilizer-plant relations were Dr. M. Fried of the agricultural research service, USDA, and Dr. N. T. Coleman, of North Carolina State College.

Another USDA speaker who appeared on this part of the program was Dr. W. L. Hill of the agricultural lime section, Beltsville, Md., who spoke on the relation of associated salts to the availability of phosphorus to the plant.

B. L. Baird, North Carolina State College soils researcher, and Dr. T. E. Tramel, Mississippi State College agricultural economist, told the convention delegates about agronomic-economic studies. In this research, different returns per dollar invested in fertilizer—all considering varied conditions of soil, yield, pounds of fertilizer applied, and other factors—are studied.

Preparation and properties of slowly-soluble potassium fertilizers were outlined and plans were considered for studying these materials in the field. The materials now being produced for experimental purposes on a pilot-plant scale include fused potassium-calcium pyrophosphate of low water-solubility, and potassium metaphosphate which may contain low to high proportions of potassium in water-soluble form.

Agronomists are interested in potassium fertilizers of relatively low water-solubility because such materials may help to control potassium leaching on sandy soils. These materials may also be of interest in connection with the problem of luxury feeding, it was pointed out. Also, salt effects associated with high applications of conventional potassium fertilizers are worthy of study in connection with these newer types of materials, the speaker said.

The members who represent the Southern regional soil research committee at the conference discussed plans for their southern regional lime project. Its estimated duration is 10 years, and will include a study of how much crops respond to lime, how often reliming is necessary, and how soils change in relation to the amount of lime applied.

The liming situation has grown steadily more important as farmers in the South have shifted away from a cash cropping system to one that is more balanced and diversified, and that includes livestock. Farm livestock programs require legume seedings which in turn require application of the right amounts of lime to the soil.

Project leaders of the southern regional lime project include: H. V. Jordan, State College, Mississippi; E. H. Stewart, Clemson, South Carolina; O. L. Bennett, Thorsby, Alabama; C. L. Parks, Marianna, Arkansas; A. E. Royer, Fleming, Georgia; and W. E. Adams, Athens, Georgia. Work on the project will be conducted in Alabama, Arkansas, Georgia, Mississippi, South Carolina, and Puerto Rico.

Dr. L. E. Ensminger, agronomist on the staff of Alabama Polytechnic Institute, Auburn, Alabama, and Dr. George Stanford, chief of the Soils and Fertilizer Research Branch of TVA's Agricultural Relations Division at Wilson Dam, were co-chairmen for the meeting.

AGRONOMISTS AT CONFERENCE—The annual fertilizer evaluation conference held at Wilson Dam, Ala. Jan. 23-25 attracted state experiment station and college agronomists from a wide area. In top photo, left to right, are soils experts Dr. J. D. Lancaster, Mississippi State College; Dr. E. C. Doll, University of Kentucky; Doctors J. A. Lutz and C. I. Rich, Virginia Polytechnic Institute; and Dr. A. J. Ohlrogge, Purdue University. In the lower photo, left to right, are B. L. Baird, North Carolina State College; Dr. T. E. Tramel, Mississippi State College; Albert Hatfield, University of Kentucky; and Jack L. Knetsch, TVA.

New Jersey Mosquito Control Group to Meet

NEW BRUNSWICK, N.J. — Plans are being completed for the 44th annual meeting of the New Jersey Mosquito Extermination Assn. at Hotel Haddon Hall, Atlantic City, March 13-15.

Dr. Bailey B. Pepper, chairman of the entomology department at Rutgers University, and secretary of the association, said that about 30 speakers would present papers during the four official sessions, beginning March 13 at 2 p.m.

SOIL SPECIALIST

URBANA, ILL. — Lloyd McKenzie has joined the Illinois Agricultural Extension Service as an extension specialist in soils.

NEW CHEMICAL — Both African Violet (Pink Cloud) plants pictured above were planted at the same time. The photo was taken 6 weeks after plant on left was treated with "Gibrel." Scientists of Merck & Co., Inc., manufacturer of the product, say the effect of "Gibrel" is noticeable in 4 days, and the growth peak is reached in about 3 weeks.

• • •

New Merck Plant Growth Booster to Reach Market Soon

RAHWAY, N.J.—Merck & Co. announced recently that its new plant growth booster, "Gibrel," will soon reach the market.

The product is being marketed immediately by Merck in the potassium salt form of gibberellic acid to formulator-distributors on a nationwide basis. It is expected that formulators' products incorporating the new compound will be available in the early spring, Merck said.

The announcement said that, based on experiments by Merck scientists and collaborating researchers, "'Gibrel', which is neither a hormone nor a fertilizer, improves the growth traits of several ornamental plants. African violets tend to grow more erect and produce a more pointed, attractive leaf. Geraniums, when sprayed young, grow more rapidly. 'Gibrel' also initiates growth in holly when the plant is dormant, speeds the growth of jade plants, sedum, and peperomia, and aids in formation of side shoots in ivy. Only very small amounts of 'Gibrel' are required to produce its effects.

"Further research work is necessary before its use on food crops can be recommended. However, preliminary results of recent research indicate that the product may also have far-reaching and economically important effects on such plants. It stimulates certain crops to grow four times faster and to break dormancy, form flowers, set fruit and produce seeds weeks and months ahead of Nature's schedule.

"Greenhouse work indicates that 'Gibrel' alone, or in combination with certain fertilizers, promotes growth of lawn grasses. Evidence has also come to light that the plant growth stimulator increases the size of tobacco leaves. In recent investigations, university scientists have learned that 'Gibrel' can produce more tomatoes per plant, grow larger celery stalks and impart a general boost in flower growth.

"They add that 'Gibrel' has shown beneficial results in other ways, particularly to commercial seedsmen and truck farmers. It has enabled carrots to produce flowers in six months and to cause head lettuce to by-pass the head stage, growing it directly to seed. It has also helped plants go to seed without undergoing exposure to relatively low temperatures. Tomatoes sprayed with 'Gibrel' have been successfully transplanted without the usual 'shock' which normally arrests growth temporarily."

Research on the product in greenhouses and under actual, large-scale growing conditions is continuing. This research is being conducted by Merck scientists; investigators at universities; agricultural experiment stations and U.S. Department of Agriculture stations; professional growers; and others.

Mississippi Aerial Applicators to Hold First Annual Meeting

CLARKSDALE, MISS.—The first annual meeting of the Mississippi Aerial Applicators Assn. will be held at Gulfport, Miss. Feb. 14-15. The entire program will be held at the Edgewater Gulf Hotel, registration to begin on the morning of Feb. 14 and to extend through the afternoon of Feb. 15.

This is the first full year's operation of the association and its membership is represented by the major portion of the resident aerial applicators (crop-dusters) of Mississippi. Some 35 firms and their personnel are included in the present membership, and efforts are being made to encompass all of the bona-fide operators in the state.

Among the speakers who have signified that they will attend are Lt.-Gov. Carrol Gartin, a long-time aviation enthusiast who will speak on the afternoon of Feb. 14, shortly before the sea-food jamboree which is being prepared by the Edgewater Gulf Hotel. Following the social functions on the morning of Feb. 15 will be education panels designed to educate and promote the proper usage of farm chemicals.

A. G. Bennett, leader of the entomological department at Mississippi State College, along with A. L. Hamner, also of the college, will discuss current poisoning recommendations. Dr. Merkl of Stoneville Branch Experiment Station will head a panel on phosphate insecticides.

A number of social functions are planned with special attention being given to the ladies. Two dinners are offered as a part of the program.

Blocks of rooms are being set aside by the Edgewater Gulf Hotel for convention guests and can be obtained by either contacting the hotel or by contacting C. A. Moore, director, Mississippi Aeronautics Commission, Jackson, Miss.

Apache Powder Co. to Build New Ammonia Facility in Arizona

BENSON, ARIZ.—A new anhydrous ammonia plant will be erected by the Apache Powder Co. of Benson, the company has announced. The plant, costing approximately $1 million, will have a projected capacity of 30 tons a day, according to R. L. Henderson, general manager.

In a telephone interview, Croplife learned that some 75% of the new plant's production will be used in the company's manufacture of nitroglycerin-based high explosives and newer types of blasting agents. The remainder will be used for other purposes, including fertilizer. It was emphasized, however, that the firm does not plan to do any extensive marketing of its fertilizer-grade ammonia.

Apache Powder is currently meeting its requirements of nitric acid and ammonium nitrate from other sources, but expects to establish its own source by October, 1957, when the new facilities are scheduled to go on stream.

Natural gas, from which ammonia will be produced in the new plant, will be purchased from the El Paso Natural Gas Co., and will be taken from a line which runs near the plant site.

Apache has contracted with the Girdler Co., Louisville, Ky. to design, equip, and start operation of the unit. Actual construction of the plant will be handled by Apache, the firm spokesman said.

Oklahoma Distribution

OKLAHOMA CITY—Fertilizer distribution in Oklahoma during the last three months of 1956 totaled 29,343 tons, according to a report by Parks A. Yeats, director of the Oklahoma Seed, Feed & Fertilizer Division.

Quarantine Against Soybean Nematode Favored at Hearing

WASHINGTON — General agreement on the need for quarantine action to help prevent spread of the soybean cyst nematode was expressed in testimony given at the public hearing on a U.S. Department of Agriculture proposal for a federal quarantine, held in Washington, D.C., Jan. 31.

This nematode, a potentially serious threat to the nation's billion-dollar soybean crop, has been found so far in a total of 4 counties in 3 states — North Carolina, Missouri and Tennessee.

One of numerous kinds of near-microscopic eelworm parasites that prey on plants, it causes "yellow dwarf" disease of soybeans and also may affect annual lespedeza, common vetch and snap beans.

Representatives of farmers, seedsmen and others interested in 9 states —North Carolina, Missouri, Tennessee, Arkansas, Illinois, Indiana, South Carolina, Virginia and New Jersey—were present at the hearing. Communications received by the department from 5 additional states —Connecticut, Kentucky, Nebraska, Ohio and Pennsylvania—were read into the hearing record.

Although communications from two of the latter group of states recommended further study of the soybean cyst nematode before a quarantine was imposed, testimony submitted by officials of the other states generally favored a federal quarantine and in some cases urged that it be imposed immediately.

Representatives from North Carolina, where a state quarantine has been in effect against this nematode since March, 1956, urged that if a federal quarantine is established it should follow the general form adopted in that state. The delegation was especially concerned that a federal quarantine not impede safe movement of flower bulbs and truck crops, the main agricultural products of the two North Carolina counties (New Hanover and Pender) where the nematode has been found. Soybeans are grown in these counties mainly as a cover crop.

In the other two counties infested —Pemiscot County, Mo., and Lake County, Tenn., which lie opposite each other on the Mississippi River —soybeans are a major crop. Representatives from these two states, while also recognizing the need for a federal quarantine, emphasized the importance of continuing normal trade in soybeans harvested for beans and seed.

Plant pest control officials of both Missouri and Tennessee reported on research indicating that bulk-harvested soybeans, when properly handled, could be moved safely under proper quarantine regulations.

Testimony by representatives of these two states indicated their belief that additional areas infested by the nematode were likely to be found during 1957 in the Mississippi Valley.

The hearing testimony brought out that cause of the infestations in North Carolina and in the Missouri-Tennessee area is not known. It was agreed that the possibility of the nematode having spread from North Carolina to the infested counties along the Mississippi is extremely remote, and that the presence of the nematode in these two widely separated areas is more likely due to separate introductions of the pest from the Orient.

The need for continuing federal aid, both in research on the soybean cyst nematode and in a program to control and if possible to eradicate the pest from the present limited areas of infestation, was emphasized by all state representatives present.

A number of those testifying at the hearing on the need for prompt and thorough control measures recommended that methods be worked out to compensate farmers for income losses suffered as a result of taking land out of cultivation, if that is necessary in efforts to suppress the pest.

Members of Congress present included Rep. Alton Lennon of North Carolina, Paul Jones of Missouri, Jere Cooper of Tennessee and E. C. Gathings of Arkansas. Senators and congressmen who were represented at the hearing or who submitted statements for the record included Sen. Sam J. Ervin and W. Kerr Scott and Rep. G. A. Barden, H. C. Bonner and H. D. Cooley of North Carolina; Sen. Stuart Symington of Missouri, and Sen. Albert Gore and Rep. Clifford Davis of Tennessee.

Robert B. Troxel

Robert B. Troxel New Sales Manager Of Lebanon Chemical

LEBANON, PA.—Robert B. Troxel has been named sales manager of Lebanon Chemical Corp. here, according to an announcement by Vernon Bishop, president of the firm.

Mr. Troxel, who holds an M.S. in science from the University of New Mexico, has been a member of the Lebanon sales staff since 1949. Prior to and just after World War II, he was a botanist for the Commonwealth of Pennsylvania in charge of the seed laboratory and enforcement of the seed act. Before joining Lebanon, Mr. Troxel served briefly in the agriculture chemical division of a large paint manufacturer.

Lebanon processes and sells fertilizers, insecticides, fungicides, weed killers and agricultural chemicals.

Croplife®

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Western states.

SURVEY INDICATES . . .

State Legislatures Are Undecided on NPK

Whether the controversial switch to the elemental base for expressing fertilizer grades becomes an actual fact lies largely in what the states do toward accepting the proposed model fertilizer bill. Such a law would make it legal to distribute fertilizer materials under the label of elemental NPK instead of the historic N-P_2O_5-K_2O; the latter being based on the oxide.

It is of primary interest, therefore, that the industry be acquainted with how the various states feel about the bill, and whether the state legislatures, a majority of which are presently in session, are considering the proposal.

A questionnaire sent by Croplife to all 48 states gives quite an insight on this question. (Page 1, this issue) It appears that as of now, at least, there is little likelihood of the fertilizer bill's being given so much as a nod of recognition in most of the states. Only two states, Iowa and Delaware, indicated that the model bill would be introduced in the current session.

But before any opponents of the bill raise their voices in a victory shout, it must be remembered that the new legislation, if any, was not to become effective until July, 1960; and between now and then, all of the state legislatures will have an opportunity to become acquainted with the provisions of the bill. Some states, about a dozen, in fact, said that the bill is expected to be introduced in the next sessions, most of which will convene in 1959.

The state control officials to whom the questionnaire was addressed, made many significant comments concerning the situation. Their attitudes ranged from hot to cold, but nearly all conceded that there is no immediate prospects of the bill's becoming law.

One of the questions bothering the fertilizer industry, is that of whether adjacent states will either accept or reject the NPK proposal. Companies distributing fertilizers on an interstate basis are naturally concerned as to whether complications are to be expected in the future on this matter.

A fertilizer manufacturer in North Carolina, for instance, would be directly affected by what the surrounding states of South Carolina, Tennesse, Georgia, and Virginia might do about the model bill. The same problem would be faced by manufacturers in all of the other states in relation to their neighboring commonwealths.

In the case of North Carolina, as an example, here are the attitudes of its neighbors, as expressed in the questionnaire:

Virginia: Prospects for introduction of the bill in the legislature's next session appear small. (The legislature is not in session now.) The comment was that the state's present fertilizer law parallels the model bill except the requirements for guaranteeing phosphorus and potassium. Furthermore, there is "general opposition" in the state to the proposed change from oxide to elemental guarantees for P and K. According to the respondent's viewpoint, "the end result will not justify the cost and confusion of making the change. No state agency or agricultural group is advocating such change." Thus, North Carolina's neighbor to the north appears unlikely to change the NPK status.

In Tennessee, the report is not quite as definite as in Virginia, although it is reported that there is no plan for the state model bill to be considered at the current session of the legislature. There was no indication as to whether or not it might be introduced at the next session.

The situation in Georgia appears to be in an unsettled state at present, with experiment station workers being "mostly for a change to elemental form"; the extension workers undecided, and the majority of the fertilizer industry in the state opposing the move. An anxious fertilizer shipper in North Carolina could well expect the ball to bounce in any direction in Georgia.

North Carolina's other neighbor, South Carolina, stated that the new law will not be introduced in the present legislature. Here, according to Dr. Bruce D. Cloaninger, Clemson, an education program is essential, well in advance of any legislation or ruling. He added that "such a program has been in effect for some time," however.

One can take a look in all directions from almost any point on the map and come up with questions about what the "other" states are going to do about the matter. Certainly, the picture is far from clear as of now.

Since most states appear to be waiting to see what their neighbors will do, a chain reaction could be started in either direction between now and 1960. If an influential state says "no" on the proposed law, it is possible that its neighbors will follow suit, and the reaction spread negatively in all directions.

The opposite could well happen should an important legislature adopt the NPK idea. Its neighbors and its neighbors' neighbors (to coin a phrase) could decide that this is the stylish thing, and go along.

Meanwhile, the industry, itself taking differing positions on the NPK question, will simply have to be patient and utilize the interim months and years to carry on as much of an educational job as possible within the states.

As of now, the matter is far from clear-cut or settled.

Trade Prospects Look Bright for Years Ahead

Executives in the agricultural chemical and other fields are continually keeping their fingers on the business pulse of the country, and particularly so in the industries in which they operate. It is stimulating to hear what these leaders have to say as they look ahead.

Peter Colefax, president of American Potash and Chemical Corp., in a recent statement, declares that it is difficult to be other than optimistic on the long-range prospects for the chemical industry.

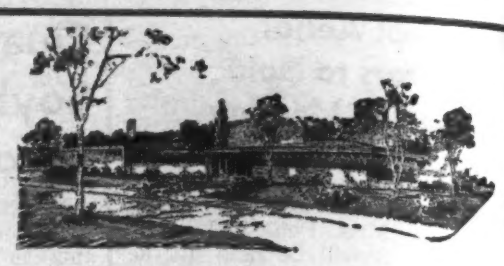
"There have been warnings from some quarters that business in general may level off because of rapid credit expansion and excessive production capacity in some lines. Also there are some who feel a correction in the business boom is overdue.

> **"However, the chemical industry has shown an impressive growth curve during the past quarter of a century, having expanded an average of 10% per year, compared to an over-all industry average of a three per cent annual increase. It should therefore be able to face any fluctuations with considerable equanimity.**

"My reasons for optimism in the chemical industry are twofold. First, there is a healthy demand for basic chemicals in many fundamental industries and, at the same time, a strong growth trend among the principal companies using these chemicals.

"Second, the many intriguing new products emerging from the vigorous research programs of chemical producers not only are increasing consumption in present markets but are, in many cases, creating entirely new markets.

"More than $300,000,000 is spent each year by the chemical industry in privately-financed research projects. This amounts to about three per cent of total net sales, in contrast to the all-industry average of an estimated one per cent of total net sales."



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MEETING MEMOS

Feb. 13-14—Kansas Weed Conference, Hotel Kansan, Topeka, Kansas.

March 13-15—New Jersey Mosquito Extermination Assn. 44th Annual Meeting, Hotel Haddon Hall, Atlantic City, N.J., Dr. Bailey B. Pepper, Rutgers University, Secretary.

Nov. 3-5—California Fertilizer Assn. 34th Annual Convention, St. Francis Hotel, San Francisco. Sidney H. Bierly, General Manager, 475 Huntington Drive, San Marino 9, Cal.

EDITOR'S NOTE—The listings above are appearing in this column for the first time this week.

Feb. 12-15—Maryland Agricultural Chemical Conferences; Episcopal Parish Hall, LaPlata, Feb. 12; County Bldg., Easton, Feb. 13; Francis Scott Key Hotel, Frederick, Feb. 15; Sponsored by the University of Maryland.

Feb. 13-15—Midwestern Chapter, National Shade Tree Conference, Pfister Hotel, Milwaukee; N. B. Wysong, 536 N. Harlem Ave., River Forest, Ill., secretary-treasurer.

Feb. 14-15—Middle West Soil Improvement Committee, Edgewater Beach Hotel, Chicago. Zenas H. Beers, 228 N. LaSalle St., Chicago, executive secretary.

Feb. 17-19—New York Garden Supply Show, New York Coliseum.

Feb. 19-20—Chemical Market Research Assn., Sheraton Hotel, Philadelphia.

Feb. 19-20—Alabama Pest Control Conference and First Annual Meeting of the Alabama Association for the Control of Economic Pests, Auburn, Ala., W. G. Eden, Alabama Polytechnic Institute, Auburn, secretary-treasurer.

Feb. 24-26—Texas Agricultural Aviation Conference and Short Course On Pest Control, Texas A&M College, College Station, Texas.

Feb. 26—Kansas Pesticide Dealer and Custom Applicator Conference, Williams Auditorium, Umberger Hall, Kansas State College, Manhattan, Kansas.

March 4-5—Fertilizer Section, Southern Safety Conference, Hotel John Marshall, Richmond, Va. Quentin S. Lee, Cotton Producers' Assn., Atlanta, Ga., general chairman.

March 5-6—Western Cotton Production Conference, Hotel Westward Ho, Phoenix, Ariz.

March 6-8—National Agricultural Chemicals Assn., Spring Meeting, Fairmont Hotel, San Francisco, L. S. Hitchner, 1145 19th St. N.W., Washington, D.C., Executive Secretary.

March 11-12—Southwestern Branch, Entomological Society of America, Annual Meeting, Gunter Hotel, San Antonio, Sherman W. Clark, 811 Rusk Ave., Houston 2, Texas, Secretary-Treasurer.

March 14-15—Oregon Feed & Seed Dealers Assn., Annual Meeting, Multnomah Hotel, Portland, Ore.; March 14 Morning Program Set Aside for Fertilizer Topics.

March 27-29—North Central Branch of Entomological Society of America, Annual Meeting, Des Moines, Iowa.

April 2—Western Agricultural Chemicals Assn.; Spring Meeting, Hotel Biltmore, Los Angeles, Cal.; C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., executive secretary.

April 14-15—Fifth Annual California Fertilizer Conference, Fresno State College, Fresno, Cal. Sponsored by California Fertilizer Assn., Sidney H. Bierly, General Manager, 475 Huntington Drive, San Marino 9, Cal.

June 9-12—National Plant Food Institute, annual meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

June 17-19—Fifteenth Annual Convention of the Association of Southern Feed and Fertilizer Control Officials, Dinkler-Tutwiler Hotel, Birmingham, Ala., Bruce Poundstone, Kentucky Agricultural Experiment Station, Lexington, Ky., Secretary-Treasurer.

June 23-26—American Society of Agricultural Engineers, Golden Anniversary meeting, Michigan State University, East Lansing, Mich.

June 26-28—Eighth Annual Fertilizer Conference of the Pacific Northwest, Benson Hotel, Portland, Ore. B. R. Bertramson, Washington State College, Pullman, Wash., chairman.

July 10-14—Plant Food Producers of Eastern Canada, Manoir Richelieu, Murray Bay, Quebec.

July 17-19—Southwestern Fertilizer Conference and Grade Hearing, Galvax Hotel, Galveston, Texas.

Oct. 2-4—Eleventh annual Beltwide Cotton Mechanization Conference, Shreveport, La.

Dec. 11-13—Agricultural Ammonia Institute, Seventh Annual Meeting, Hotel Marion, Little Rock, Ark., Jack F. Criswell, Claridge Hotel, Memphis, Executive Vice President.

Diamond Sales and Earnings Set New Records in 1956

CLEVELAND—Record sales and earnings in 1956 by Diamond Alkali Co., Cleveland, was reported recently by Raymond F. Evans, chairman and chief executive officer, on the basis of unaudited figures.

Sales of Diamond chemicals in 1956 climbed to their highest level for the fifth successive year, reaching approximately $121,250,000. This represents an increase of 10% above the 1955 total of $110,292,280, the previous record peak.

Net income reached a record $10,380,141, or $3.83 per share, an increase of 23% over 1955 income of $3.11 per share, adjusted to current shares outstanding. 1956 earnings are after a special deduction of $.28 per share reflecting accumulated losses since March, 1955 of Diamond Black Leaf Co., an unconsolidated affiliate.

In reviewing the year's results, Mr. Evans attributed increased 1956 earnings to continued gains from previously completed expansion programs and to further growth of the firm's organic chemicals business. He cited two financing accomplishments of the past year: (1) prepayment of $2,550,000 worth of long-term debt installments due in 1957, leaving only minor installments remaining to be paid this year; and (2) retirement of preferred stock as a result of calls made in January and April, 1956, whereby 120,000 shares outstanding at the end of 1955 were retired through redemption and conversion to common stock.

HEADS SUBSTATION

STATE COLLEGE, N.M.—Paul J. Torell, assistant in agronomy at the New Mexico A&M Experiment Station, has been appointed assistant agronomist in charge of the college's southeastern substation at Artesia.

70 Enroll in Oregon Short Course for Sprayers and Dusters

CORVALLIS, ORE.—Seventy crop sprayers and dusters enrolled in the first professional short course of Oregon agricultural chemical applicators held at Corvallis Jan. 28 through Feb. 1. The course was sponsored jointly by the Oregon Department of Agriculture and Oregon State College.

Certificates of graduation were presented to 65 applicators by F. E. Price, dean of agriculture and extension, at conclusion of the professional section of the course. The certificates represented the equivalent of 20 hours of college credit.

The course was devoted to herbicides, with studies conducted by the college staff and arranged by Virgil Freed, associate agricultural chemist. Operators at this course, the sixth annual session for Oregon sprayers and dusters, requested that the professional status be continued next year with emphasis on insecticides and a refresher in herbicide application.

A second section of the course, devoted to beginners preparing to take the state chemical applicators examinations, was in charge of Ray Kelso, supervisor of herbicide control for the state department of agriculture. Twenty-seven, including two applicators from Washington and four from California, attended this section.

Fourteen operators took their state examination at the conclusion of the course. They bring to about 250 the number of ground and air applicators licensed to use herbicides in Oregon.

California Fertilizer Assn. Schedules November Meet

SAN MARINO, CAL.—The thirty-fourth annual convention of the California Fertilizer Assn. will be held at the St. Francis Hotel, San Francisco, Nov. 3-5, 1957, according to Jack Baker, Los Angeles, association president. Mr. Baker said that the hotel is making available all necessary facilities to take excellent care of the needs of the some 600 persons expected to attend.

The convention theme will be "Our Partnership With Agriculture," and outstanding speakers representative of agriculture and of the fertilizer industry will be featured. A panel discussion is being developed around the subject of the convention theme, Mr. Baker said.

Soil Fertility Meetings Planned in Texas Area

PLAINVIEW, TEXAS—One of a series of six soil fertility meetings for the High Plains area of Texas will be held in Plainview Feb. 18. The meetings are being sponsored by the Texas Extension Service and the local chambers of commerce.

At the Plainview meeting the speakers will be G. G. Gibson, director of the extension service; Duke Thornton, agricultural chemist, and Jack Barton, soil and water conservation specialist. There will also be a panel of local farmers and others on the program.

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